AIR CONDITIONING HEATING & REFRIGERATION NEWS
The Newspaper of the Industry
RESIDENTIAL — COMMERCIAL — INDUSTRIAL
October 5, 1959

Issued every Monday at
450 West Fort St., Detroit 26, Michigan
Established 1926

Member, Associated Business Publications — Member, Audit Bureau of Circulations

Vol. 88, No. 5, Serial No. 1,593
Trade Mark Registered U.S. Patent Office. Copyright 1959, by Business News Publishing Co.
Subscription Price, $6 Per Year (U. S. and Canada). Foreign: $10.00 Per Year.
Reentered as second class matter October 3, 1936, at the post office at Detroit, Mich., under the Act of March 3, 1879.

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Chicago With Palms
The Real Story of Puerto Rico
Free Enterprise In Action
Freedom from Taxes
People and Markets Abundant
Would Your Family Be Happy In Puerto Rico?

Stories of the Week

In Germany an intelligent dog was taught, patiently and painstakingly, to play classical music on a specially built piano.

At an audition the agent coughed violently. Whereupon the dog interrupted his act and bared his fangs.

"Don't worry, Sol," soothed the trainer. "His Bach is worse than his bite."

Any man who thinks he's more intelligent than his wife is married to a smart woman.—*Wall Street Journal.*

Figures may not lie, but they sometimes push the truth a little out of position.—MORRIE GALLANT.

Naturally no one ever gives the groom a shower—he's all washed up anyway. — J. W. PELKIE.

Chicago With Palms

Experiencing a few days in San Juan's plush Caribe Hilton hotel is pretty much like spending a week end at the Edgewater Beach hotel in Chicago. Chief difference:

In Puerto Rico the natives are friendlier.

Accommodations, food, music, entertainment—all are similar. You can gamble in San Juan, but who says you can't in Chicago?

And, just as in the case of a convention at the Edgewater Beach, most people never leave the hotel.

Quoting the tagline of Dope's best-known story: "just like Chicago, Atlantic City, or anywhere!"

The Real Story of Puerto Rico

To be sure, the scenery is tropical, and the people Latin. Although they are full American citizens, their conversational language perhaps best can be described as "Spanglish."

Patios, balconies, senoritas,
(Continued on Page 11, Col. 1)

IRS Studies ARI, NEMA Suggestions; Cory Tax Case to Supreme Court

WASHINGTON, D. C. — The Internal Revenue Service is studying recommendations of the Air-Conditioning & Refrigeration Institute and the National Electrical Manufacturers Association regarding the proposed new Treasury Dept. regulation governing application of the Federal excise tax of 10% on room air conditioners and the 5% tax on household refrigerators and freezers.

The recommendations were offered last week at a public hearing held here by the IRS. They pertained to definitions, interpretation, and effective date of the new regulation, which will apply the 10% tax to all room air conditioners instead of only those of under 1-hp. rating.

Essential parts of the proposed regulation were published in the Aug. 31 issue of the NEWS.
(Concluded on Back Page, Col. 1)

WASHINGTON, D. C.—Cory Corp. has asked the U. S. Supreme Court to upset a decision by the Seventh U. S. Court of Appeals that determining the taxability of room air conditioners by horsepower rating was impractical and uncertain.

Cory charged that the decision "retroactively substituted a vague and subjective standard which is causing widespread confusion" for the horsepower test which had been administered by the Internal Revenue Service for 10 years without confusion and controversy.

Congress imposed a 10% tax on home air conditioners in 1941. IRS ruled in 1948 that only room air conditioners of less than 1 hp. were taxable.

ARI Heat Pump Certification Planned for '60

WASHINGTON, D. C. — A certification program for unitary heat pumps will be inaugurated by the Air-Conditioning & Refrigeration Institute to parallel the already operative and "highly successful" certification program for unitary air conditioners, the ARI Unitary Air-Conditioner Section decided at a meeting here recently.

The heat pump certification program will be based on testing and rating in accordance with ARI Standard 240, which the Unitary Section will revise in order to bring up to date its references to Standards of ASA, Underwriters' Laboratories, and particularly to the proposed new ASHRAE "Standard Methods of Testing for Rating Heat Pumps."

Certification of unitary air conditioners is based on testing and rating of units in compli-
(Concluded on Page 4, Col. 5)

RACCA Attacks 5-Yr. Warranty As Enemy of Proper Profit

By Phil B. Redeker

LOS ANGELES, Sept. 30—"Without adequate profit there can be no progress" was the war cry of the Refrigeration & Air Conditioning Contractors Association (national) at its annual convention here, and officers and members set up plans to attack those elements in industry's practices and their own operations which they see as enemies of proper profits.

Chief target among current industry practices is the five-year warranty on air conditioning and refrigeration equipment. A strong resolution on this point was passed which stated that contractors are the ones held responsible for misunderstanding on warranties and thus suffer losses in profits and goodwill. The resolution asked that every manufacturer with such a warranty reconsider the terms and conditions, and limit warranties to one year.

Dudley Cawthon, Miami contractor and former RACCA president, expressed the feelings of the assembled contractors when he stated "The five-year warranty is probably the worst thing that ever happened to this industry—I've tried to keep accurate records on what it costs me, which come to about $2,000 a year, but I know there are many other hidden costs."

The other main approach to improving the profit picture will be to increase local and national association activity to improve
(Concluded on Page 19, Col. 1)

Text of Resolution

Following is the text of the resolution which RACCA (national) passed at its national convention, relating to the 5-year warranty:

Whereas, many manufacturers of refrigeration and air conditioning equipment have, during the past few years, issued a five-year warranty on the sale of their products to replace, f.o.b. manufacturer's plant, parts which, in the opinion of the manufacturer, are defective,
(Concluded on Page 19, Col. 3)

More detailed stories on the presentations and discussions at the RACCA convention will be published in later issues of the NEWS.

BEHIND PAGE ONE . . .

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- **Technical Center** 17
- **Servicing Auto Air Conditioners** 21

Trane Bows Completely Hermetic Absorption 'Cold Generator'

LA CROSSE, Wis.—Marking the entry of another major manufacturer into the absorption field, the Trane Co. here has introduced what it says is a completely hermetic absorption "Cold Generator," according to A. C. Menke, vice president, heating and air conditioning sales.

The unit is powered by low-pressure steam and uses water as the refrigerant with lithium bromide as the absorbent.

Capacity ranges from 100 to 350 tons, and the unit can be used for single or multiple installations, Trane says.

The fully automatic Trane unit is said to represent major design improvements. Single-shell design and hermetic pumps prevent air leakage to maintain full-rated capacity and resist oxidation. The hermetic design and simplified purge system make possible the purging of air from the machine only a few times a year which cuts maintenance to a minimum, the company explains.
(Concluded on Back Page, Col. 2)

Industry Beginning To Feel Steel Strike

DETROIT — Every day into October that the steel strike continues, the harder will be the pinch on many manufacturers in the air conditioning and refrigeration industries.

Several are already curtailing production and/or buying steel at premium prices from irregular sources.

Here are some replies by manufacturers to a NEWS query on what effect a prolongation of the steel strike beyond Oct. 1 would have on their 1960 plans. (Opinions from other industry firms appeared on page 1 of the Sept. 28 issue.)

Lennox Industries, Inc.: "The steel strike will have to be settled during the first half of October to prevent serious trouble in our production program. A strike settlement in early October will not mean much actual steel receipt until early December. By December, we will be needing mill shipments of steel very badly.

"By going to warehouses, at premium prices, for steel to plug the holes in our inventory, we are set now to continue producing on schedule to Dec. 1.

"If the steel strike lasts beyond the middle of October we anticipate a drastic curtailment of production in all Lennox factories which means that we will not be able to supply our dealers with their urgent and current needs until mill shipments of steel are again available."

Revco, Inc.: "We have steel to cover production to Nov. 10. In October we start producing our
(Concluded on Page 4, Col. 1)

Stockholders OK Sale of Frick

WAYNESBORO, Pa.—As of the close of business Oct. 31, a new subsidiary of General Waterworks Corp., Philadelphia, will take over operations of the Frick Co. here.

Preparations for formation of the subsidiary corporation got under way after Frick stockholders, at a recent special meeting here, approved a proposal by General Waterworks to acquire Frick's assets, properties, and business.

D. Norris Benedict, president and general manager of Frick, announced that 91½% of all categories of stock was voted in favor of exchanging Frick securities for General Waterworks stock. A majority of the votes were cast in advance by the submission of proxies, it was reported.

Following the meeting, W. H. Aubrey, vice president and as-
(Concluded on Page 4, Col. 5)

July Distributor Sales Rise 18%

WASHINGTON, D. C.—July sales of air conditioning and commercial refrigeration equipment distributors were down an average of 3% from June but up 18% compared with July, 1958, according to the monthly wholesale trade report of the Census Bureau.

For the first seven months of 1959, the distributors' sales were 11% ahead of those in the corresponding period of 1958. Their inventories at the end of July declined 2% compared with a year earlier and were down 3% from the end of June.

Sales of plumbing and heating equipment and supplies distributors in July increased 2% compared with June and rose 21% over the year-ago level. Their first-seven-months sales rose 17% above those for the like period of 1958.

Janitrol Select Dealers Convene Oct. 25-27

COLUMBUS, Ohio — More than 1,000 select dealers and sales representatives of the Janitrol Div. of Surface Combustion Corp. will gather here Oct. 25-27 for the firm's second annual get-together.

Kick-off of the meeting will be a reception Sunday, Oct. 25, at the Deshler-Hilton to be hosted by R. A. Bell, president of Janitrol Div. and executive vice president of Surface Combustion.

Sessions are planned Monday and Tuesday at Veteran's Memorial auditorium. Highlight of the meeting will be the introduction of a newly-engineered series of central air conditioners and a "dramatically-styled" unit heater line featuring the exclusive Janitrol "Multi-Thermex" heat exchanger, it was pointed out.

Steel Union Fights To Limit 'Contracting-Out'

WASHINGTON, D. C.—Significant decisions on whether industrial unions can legally prevent their employers from awarding plant maintenance and construction work to outside contractors appear to be in the offing.

One such decision may come with the settlement of the national steel strike. It is understood that one of the issues, though a minor one, is the right of the company to contract construction work involving jobs within the classifications filled by union members. The union seeks to limit that right.

Another decision may come from the National Labor Relations Board. It is currently reviewing a hearing examiner's decision in a case involving steel workers and union employes of outside contractors over work at the Tennessee Coal & Iron Div., United States Steel Corp. near Birmingham, Ala.

Hearing Examiner George Dowling decided that the steel workers did not engage in a secondary boycott or otherwise violate the National Labor Relations Act when they forced off the job employes of outside contractors who held contracts for a construction project at the division's plant.

The steel workers claimed jurisdiction over portions of the work. Their contract with Tennessee Coal & Iron set up job classifications including certain craft jobs such as electrician, carpenter, machinist, painter, etc., and provided that the company was to give prior consideration to employes in a layoff status before hiring new employes.

Steel workers claimed that under the contract, laid-off steel workers were entitled to work in their classifications in the construction project.

Hearing Examiner Dowling found that the dispute was between the steel workers and the company and that the harm done to the outside contractors was incidental to the dispute and did not represent a secondary boycott.

He also declared material to the case the fact that the steel workers "had members in a layoff status who were qualified to do some of the construction work and who had done similar work in the past.

"There was thus an arguable basis for respondent's position and they could properly and lawfully advance demands that so much of the work be given their members as fell within the established job classification," he said.

He recommended dismissal of the complaint against the steel workers.

Little Rock Considers Heating, Cooling Code

LITTLE ROCK, Ark. — City Manager Dean I. Dauley disclosed that Little Rock, which he said is one of the few cities of its size without a code to assure proper installation of heating and cooling equipment, is considering such a code.

Dauley said Mayor Knoop several weeks ago recommended adoption of a heating and air conditioning code. Copies of codes in effect in several cities similar to Little Rock have been obtained for study, he added. He noted that most cities have a special ordinance separate from the plumbing code to cover heating and cooling systems.

Representatives of heating and air conditioning businesses will be consulted before any proposal is made to the Board, Dauley said.

FTC Drive Aimed At Discriminatory Co-op Ad Allowances

WASHINGTON, D. C. — The Federal Trade Commission is conducting a vigorous drive against discriminatory advertising allowances to favored customers, according to Earl W. Kintner, chairman.

Speaking to the Advertising Club of Washington, he said the FTC was reviewing or investigating 68 cases. He said that "abuse or misuse of cooperative advertising allowances . . . may be getting out of hand."

Kintner warned that if he conveyed "the possibility of future governmental storm clouds," then "you have correctly interpreted my reason for being here."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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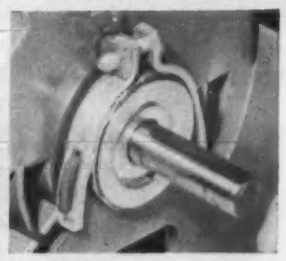

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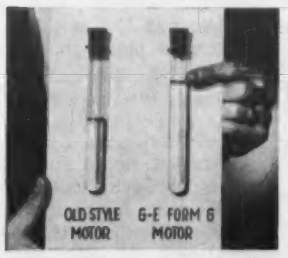

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LONG-LIFE STATOR—Mylar* polyester film, Formex† wire, heavy-duty bonding dip resists heat, moisture, and electrical stresses.

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General Electric's motor story can be summed up as *service plus*. For instance:

GENERAL ELECTRIC ENGINEERS will help you tailor a Form G motor to meet your performance requirements and provide the fast sample service you need to finalize the design and tooling of new models.

APPLICATION HELP from G-E engineers—specialists in air-conditioning motors—assures you of the best motor for your product, commensurate with your specific performance requirements.

MANUFACTURING CAPACITY and multi-plant flexibility are geared for fast deliveries of volume orders. This assures you of constant availability of the motors you need.

AND THE RIGHT MOTOR IS AVAILABLE from General Electric *now*. You'll find the motor you need in General Electric's complete line of years-ahead fhp motors designed specifically for your air-conditioning requirements. If you'd like help on a specific problem, contact your nearby General Electric Apparatus Sales Office. For more information on Form G motors, write for bulletins GEA-6424 and GEA-6533, to General Electric Company, Section 702-106, Schenectady 5, N. Y.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Industry Feels Pinch of Steel Strike--

(Concluded from Page 1, Col. 4)

1960 models to cover sampling. Every day that the strike is on after Oct. 1 we expect to lose a day in production since it will require five to six weeks to secure steel after settlement."

General Electric Co., Air Conditioning Dept.: "A prolongation of the strike beyond Oct. 1 would not affect our 1960 plans as we would continue to plan aggressively. But, of course, a prolonged shortage of basic metals would adversely affect our ability to execute our 1960 plans."

McCray Refrigerator Co., Inc.: "If the strike lasts much beyond Oct. 1 it will begin to hurt."

Marley Co.: "The strike has necessitated warehouse purchases of steel at increased cost. Major production schedules start later, so October settlement should only prolong the above effect."

Copeland Refrigeration Corp.: "Effect that a prolonged steel and copper strike might have on our plans for 1960 will probably be determined by our customers' production schedules. We are maintaining extremely close liaison with the commercial refrigerator and air conditioning manufacturers and our own suppliers.

"Our production, inventory, and sales programs are running at normal yearly levels, comfortably above 1958. We are carefully weighing overtime schedules against possible material shortages."

Lau Blower Co.: "Steel strike is creating an unbalanced condition in our steel inventory. If the strike goes longer than Oct. 1 we shall be curtailed at the beginning of our 1960 fiscal year, namely Nov. 1, 1959. If the strike continues . . . we are definitely going to be affected by the shortage of steel."

Brundage Co.: "Prolongation of the strike will affect not only our production but also our sales as people will not be inclined to buy as readily as they have been. If sales dropped off rapidly, our inventory may not drop off proportionately.

"Our production is holding up and we have not been out of materials as yet. Our inventory, however, is about 50% higher than normal due to a build-up in steel inventory and our sales are holding up satisfactorily."

John E. Mitchell Co., Inc.: "No effects expected until first-quarter production by our suppliers is affected."

Cincinnati Sub Zero Products: "There has been some delay on incoming orders which are being held by prospective purchasers until the strike is settled. We do not foresee any change in our operations for 1960, unless the strike should remain in effect considerably beyond Oct. 1."

Armstrong Furnace Co.: "Continuation of the strike will curtail our operation until the mills catch up with the great demand they will face."

Mathes Co.: "Our customers are purchasing what appears in excess of their normal requirements. Although we would like to believe they are selling more, it is possible that they are increasing their inventories.

"Naturally both sales and production are up and our inventory of finished goods is diminishing. Although we have a fair amount of inventory of major sizes of steel, it has become necessary for us to purchase a small quantity of odd sizes from warehouses at increased prices.

"If this situation continues, it will be necessary for us to increase our prices."

Admiral Corp. late in September informed its dealers that it would shut down production lines from Oct. 1 to Nov. 15 due to lack of steel. The Nov. 15 date was hedged with the provision that steel is available at that time.

Certification--

(Concluded from Page 1, Col. 2)

ance with ARI Standards 210 (for electrically-powered units) and 250 (for heat-operated units). Both of these standards are undergoing revision also, along the same lines as Standard 240.

Because of the necessity for revising Standard 240, and other technical details, there will be some delay in making the heat pump certification program effective, but it is hoped that it will be under way sometime in 1960, and certainly no later than Jan. 1, 1961, it was pointed out by Frederick J. Reed, ARI chief engineer.

"When inaugurated, the heat pump program will provide, as does the unitary air conditioner program, for testing and rating by manufacturers and reporting ratings to ARI, for publication of ratings in an official ARI directory, for random testing of units on the market by an independent testing laboratory under contract to ARI, and, for special tests on units on which complaints have been lodged," it was pointed out.

"Participating companies will sign contracts with ARI for the testing and rating procedures, and will be authorized to use the ARI Seal of Certification on unitary heat pumps so long as they are tested and rated in compliance with the standard."

Meanwhile, Reed announced that copy was being prepared for an Oct. 1 edition of the "Directory of Certified Unitary Air-Conditioners," the final 1959 issue of the directory under the Unitary Air-Conditioner Program. It will contain the names of 51 participating companies, with the certified ratings of all unitary air conditioners produced by them.

Frick Sale--

(Concluded from Page 1, Col. 5)

sistant general manager, and Arnold Roschli, secretary-treasurer of Frick, went to Philadelphia to help General Waterworks form the subsidiary firm. They were accompanied by John M. Seabrook, a General Waterworks official who had been in Waynesboro for several days as an observer.

Aubrey is scheduled to become president and general manager of the new firm. Benedict, who plans to retire, said he would stay with Frick through final liquidation but will not participate in the new corporation.

Benedict noted that the contract between the two companies calls for maintaining the name "Frick" in the new corporation.

Also, he pointed out, General Waterworks agrees that the new corporation will continue the Frick business in Waynesboro with the present staff.

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B&G COMPRESSORS
Automotive type piston and heat treated connecting rod—both of light weight alloy.
Valve and cylinder sleeve assembly. Special iron alloy cylinder sleeves are removable; valves are highest grade Swedish steel.

You'll seldom need to service a B&G Compressor—but when you do, all the parts needed *can be carried in two hands.* Piston and rod assembly, and valve and cylinder assembly *will handle 95% of all B&G compressor repair problems!*

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Add to this new superior design, *precision manufacture*—with every major part made and guaranteed by Bell & Gossett. The result is a compressor unmatched for efficiency, quiet operation and freedom from vibration. *Any vibration is no greater than that of a well balanced electric motor.*

B&G Compressors are incorporated in all B&G Package Liquid Coolers and Condensing Units. They can be equipped with multi-step capacity control systems...standard equipment includes gas and oil equalization ports, magnetic plugs and oil sight glass.

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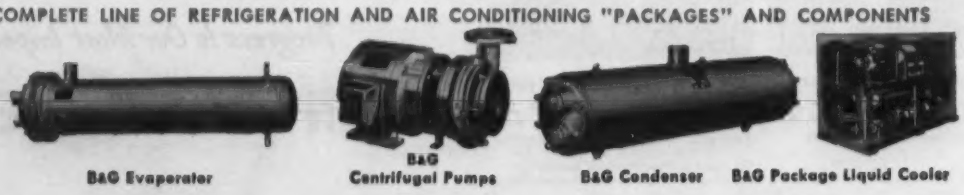


Washington Home Builder Sells 100 Air Conditioned Units In Heat Wave

WASHINGTON, D. C.—More than 100 units in a large air conditioned housing project sold quickly as an August heat wave pushed temperatures in the 90's almost every day, McCrea Equipment Co., air conditioning contractor, reported recently.

The units, in row houses built in groups of three units, were priced at $11,000, and, with their central air conditioning and heating system as a principal feature, were eligible for Federal Housing Authority Insured loans for sums as high as $10,600.

Allen & Rocks, Inc., the builder, has applied for more FHA commitments.

Project Will Have About 500 Homes

The project is Country Club Village at Cheverly, Md., about a 20-minute drive from the downtown section of Washington. When completed the project will have approximately 500 houses.

"The air conditioning system is designed with the same principles and quality that one would put into a $100,000 air conditioning job," according to C. L. McCrea, owner of McCrea Equipment.

McCrea is a registered professional engineer in the District of Columbia and in New York state. He founded the firm in 1936.

Here is McCrea's report on the air conditioning system used in the houses at Country Club Village:

System Described

The refrigerating and condensing unit is a complete package, manufactured by Philco. The compact unit, a 2½-ft. cube, rests on a slab by the rear wall of the houses. The unit has a 2¼-ton rating.

The fan and coils to cool the air are located in a utility room by the kitchen. Cool air is circulated at the rate of 400 c.f.m. per ton of refrigeration.

The air passes through the ductwork on a counterflow principal, entering the rooms from high level wall vents, and returning through low vents.

A Minneapolis - Honeywell panel controls both the heating and cooling units. To switch from one to the other, the owner just shifts a lever.

During August when a heat wave push the average day/night temperature of the area to 88.1° F., a new all-time high, the air conditioning system in the sample house maintained the temperature between 75 and 80° F. with a humidity that never rose over 50%.

Air comes off the cooling coils at 57 or 58°, a temperature high enough so that the ductwork does not sweat.

At the Potomac Electric & Power Co. rate of 1.8 cents per kwh, cooling costs will average $70 per year. The air conditioning system will operate for about 1,800 hours.

A "Luxaire" automatic gas furnace heats the house. It has a 75,000 B.t.u. input.

The heating system uses the same ductwork as the air conditioning system, but different vents. When the furnace runs the high wall vents are closed, by hand, and low wall vents opened.

The heating plant with blower can maintain a circulation of 800 c.f.m.

With Washington Gas Light Co. rates of 11 cents per therm the furnace will operate for about $90 a year.

The houses have approximately 1,300 sq. ft. of floor space. The first floor has a living room, 19 ft. by 13 ft., a dining room, kitchen, storage room, utility room, and lavatory. The second floor has three bedrooms and a bath. There are no basements nor attics. The houses are built on slabs.

Distributor Uses Discomfort Index To Promote Residential Conditioning

KANSAS CITY, Mo. — How the U. S. Weather Bureau's Temperature - Humidity Index has been used in this area to promote residential air conditioning sales was described recently by General Heating & Cooling Co. here.

William L. Larson, advertising and sales promotion manager of this supplier of air conditioning products for residential, commercial, and institutional applications, explained that a "'Dis'comfort index chart" was worked out early this summer in cooperation with the U. S. Weather Bureau in Kansas City.

Designed and produced by General Heating & Cooling Corp., the chart was used by the firm's dealers throughout its Missouri-Kansas territory. A message on the back of the chart invites the prospect to check his own individual discomfort point.

The chart was printed on a 5 by 3½-in. card. Across the bottom are the words "DIS"-COMFORT INDEX CHART BY GH&C CO.

Outdoor dry-bulb temperatures from 65 to 105° F. are on the vertical scale and outdoor relative humidity on the horizontal scale.

Sloping across the chart are lines indicating "Dis"comfort index numbers at each temperature and humidity on the graph. In the lower left-hand corner of the chart is this explanatory legend:

DI of:

71 = -10% uncomfortable
75 = 50% uncomfortable
79 = 100% uncomfortable

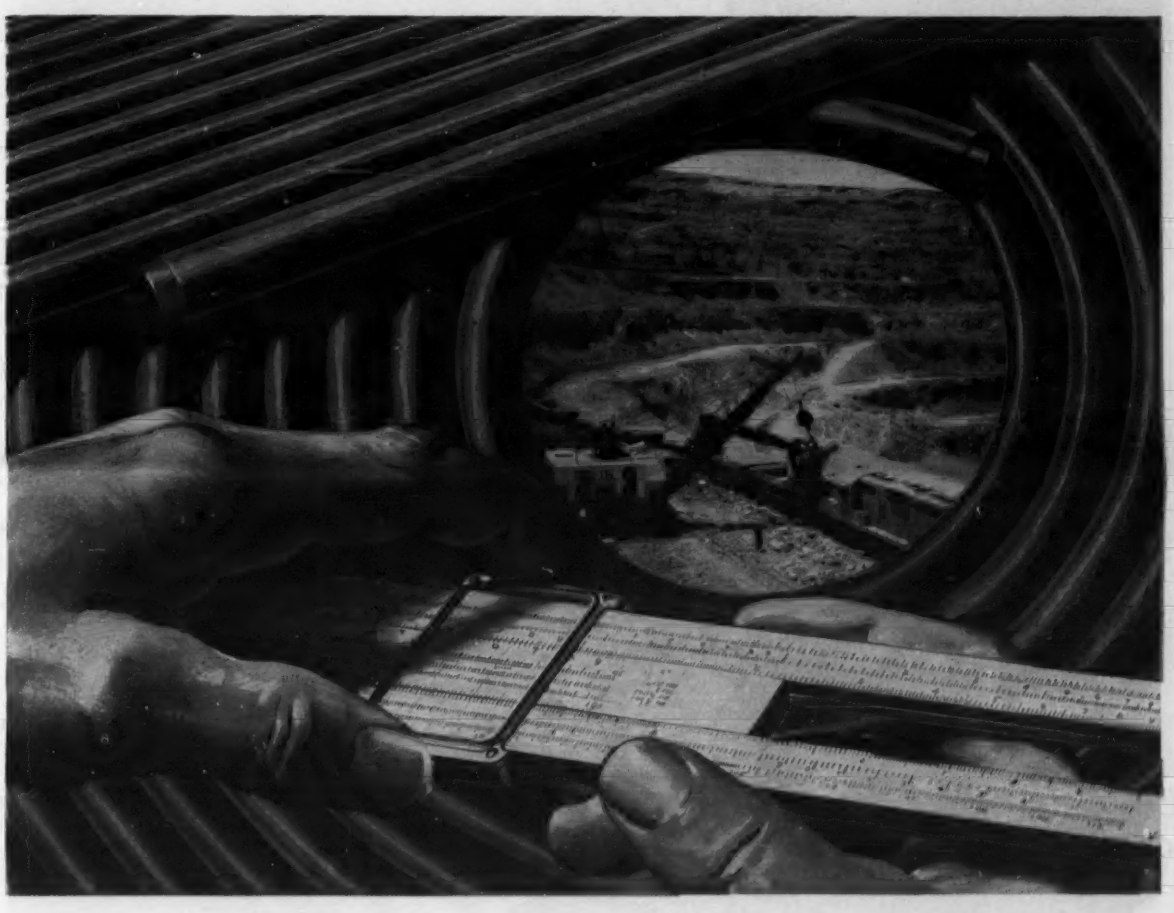
To indicate increasing discomfort, areas between the discomfort lines are colored red of deeper intensity as the DI rises.

"The verse on the backside, plus the space for dealer imprint," Larson pointed out, "allows enough 'product sell'—or shall we say a 'reminder'—to tie right in with the individual's 'dis'comfort.

He added that the chart-cards "have proven to be a lot of fun for us and our dealers."

C. L. Bailey Dies

SYRACUSE, N. Y.—Claude L. Bailey, sales representative for Genesee Refrigerator Supplies, Inc., died unexpectedly Sept. 17. He formerly owned and operated Bailey's Refrigeration & Radio Sales & Service in Eastwood for 16 years.



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2 Phelps Dodge devotes particular attention, throughout fabrication, to uniform anneal for tube flaring and careful control of die draw for close tolerance.

3 Phelps Dodge can supply maximum tube lengths and precise wall thicknesses engineered to customer specifications; straight length tube tempered to meet bending and expanding requirements.

4 Phelps Dodge multiple mill operation guarantees a steady source of tube supply to meet the needs of manufacturers of refrigerating, air conditioning and heating equipment.

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PHELPS DODGE COPPER PRODUCTS CORPORATION
New York, N.Y. • Los Angeles, Calif.

PD

Where a Sneeze Could Be a Catastrophe

'Totally Pure Air' Required for Plant Producing Delicate Missile Components

LITTLE FALLS, N. J.—An air conditioned atmosphere, "almost as free from earth's germs as that of the moon," is a requisite in the manufacture of delicate components for the guidance systems that may some day direct an American rocket to the moon, itself, it has been reported.

Fingerprint Could Destroy Space-Bound Missile

These ultra-sonic super-clean conditions are achieved at the Kearfott Co., Inc., a subsidiary of General Precision Equipment Corp., Little Falls. Here a careless fingerprint, a fleck of dust or a flake of dandruff could later cause a space-bound missile to veer crazily from its course to premature destruction, it was noted.

The air within the "ultra-clean" room at Kearfott's production and assembly area is as "totally pure as it is possible to attain on earth," according to Carrier Corp., whose equipment was designed into the system by Montgomery Engineering Co., Carrier distributor in Jersey City, N. J.

Besides air conditioning, 48 banks of filters provided by Cambridge Filter Corp., pour clean, cool air into the cleansed atmosphere of the production area, further ridding it of outside contaminants. William Hecht, president of Montgomery, said the filters are 99.95% effective—enough to screen out most bacteria and some virus, leaving only pure air.

The purity of the production area is further assured by constanly changing air. In the final assembly area the air is changed every 48 seconds; in the ultra-sonic cleaning area this is done every 18 seconds.

"If it is possible to imagine a more antiseptic air condition than already described, then it is in the final assembly area," the report continued. "The conveyor line is completely enclosed from the worker except for cut-outs for his arms. Air rushes through this enclosure at the rate of 50 f.p.m., further cleansing this already 'scrubbed' atmosphere.

"Each worker wears protective finger coverings to keep fingerprints from upsetting the sensitive balance.

PORTENDING what the industrial worker of the space age may soon be wearing, these white garbed workmen pre-assemble tiny components for missile guidance systems in the ultra-clean facility of Kearfott Co. Because of the rigid accuracy and delicate nature of the minute parts, air conditioning as pure as possible on earth was required.

WHITE garbed workmen at Kearfott have to reach into the closed off assembly area where the air is the "purest attainable on earth," according to Carrier. Air is rushed through the assembly booth at 50 f.p.m. to further insure against decontamination. Workmen are required to wear protective coverings on their fingers because a fingerprint could upset the sensitive balance of the gyro assembly.

Production, Assembly Areas Pressurized

"Still another safeguard against decontamination is the pressurization of the production and assembly area. Although pressurized enough to be noticeable to employes, the final assembly area is the best protected, with 3 lbs. per square foot more than normal atmospheric pressure—enough to keep outside impurities from entering.

"Pressurization of the Kearfott production area is done on a graduated scale. The anteroom entrance is pressurized only slightly, but each succeeding room is raised increasingly according to its importance in the exacting production and assembly process.

"The nerve center for maintaining these precise conditions is a central control panel that registers readings from each critical area. Here the engineer can quickly scan the dials to check the temperature, humidity, air pressure, and air flow in any room, at any particular instant.

"The workers in this super air conditioned area might well be pioneering in the conditions under which industry will be carried on in the space age. Dressed in white, they move about in an atmosphere of optimum comfort. Because of the unusually

Tecumseh engineering VISION

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Hermetic units now cover the range from 1/8 to 5 H.P. with variations for condenser cooling (air, water, and air-water), refrigerant, back pressure, torque and electrical characteristics. Every model has built-in sales features which are important to every user of refrigeration equipment.

This hermetic line is further backed up with 86 replacement compressors together with a full range of conventional equipment. Now you can sell matching Tecumseh equipment for all commercial applications. Investigate the outstanding advantages of going Tecumseh all the way!

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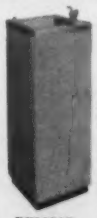

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FIRST step in decontamination of Kearfott employes is walking on a tacky gelatin mat to remove dirt from the soles of his shoes. Then he is subjected to an overhead air shower which removes dirt and lint from his clothes before entering the locker room for a change into white overalls. Two air showers, two shoe cleansings, and a thorough "scrubbing" in a surgical-like washroom are necessary before a worker is considered equal to his antiseptic surroundings.

MASTER control board indicates temperature, humidity, and pressure in each room of the Kearfott superclean assembly area. Overhead is the air shower that cleanses workers' street clothes before they enter locker room.

rapid air turnover, this has been found to be at a temperature of 74° and relative humidity of 40%.

"Besides meeting rigid requirements before they were accepted for the exacting work, the Kearfott employes must go through a daily decontamination process as thorough as that for their surroundings.

"Here is how the typical Kearfott employe goes to work. His overcoat, shoes, and hat must be stored outside the ultra-clean area.

Employe Decontamination Includes Air Shower

"Stepping into the anteroom, the decontamination begins. First, he cleans his shoes by means of a vacuum brush; then he walks on a tacky gelatin mat which removes dirt from the soles of his shoes.

"Next, stepping on an electric floor treadle, he becomes immersed in a swift flow of a cleansing air shower. This high velocity bath discharges lint and dirt into an air exhaust on the floor. When the shower has ended, the door leading to the locker room automatically unlocks and the workman steps in to undress.

"After donning white nylon overalls, cap, and loose fitting boots, our worker 'scrubs up' in a washroom containing surgical sinks, knee-operated controls, and hot air dryers. Leaving the washroom, he cleans his boots once more on the vacuum brush, steps on the tacky gelatin, and once again gets doused under the air shower.

Finally he is ready for work. The door ahead automatically unlocks permitting him to enter the sterilized atmosphere of the production area.

Building Designed To Facilitate Cleanliness

"The design of the precision facility further shows the intensive effort to minimize the effects of contamination — even from the unlikeliest source. No dust-collecting ledges were permitted in the critical rooms. All instruments and lights were recessed so they could be serviced from outside the sealed area.

"No painted surfaces were considered, eliminating the danger of flaking. The walls, floors, and ceiling were covered with vinyl plastic. Black was used on the floor to show the faintest speck of dust.

"In the ultra-sonic room, stainless steel covers the walls. Stainless and chrome covered steel make up the doors and window frames. Even the door hinges are a special ball bearing design to prevent scaling caused by conventional metal-to-metal hinges."

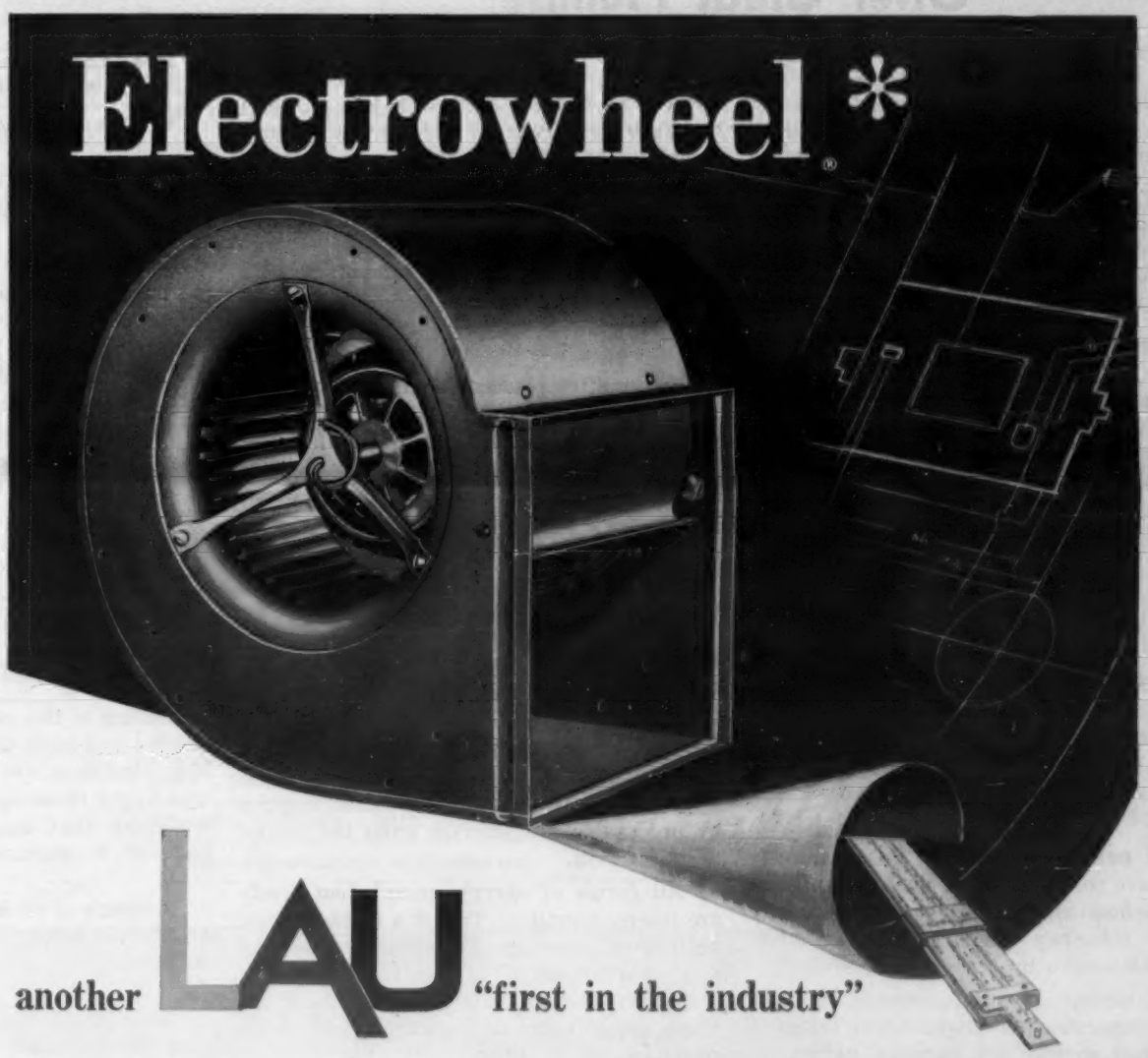
What kind of person was required for the critical exactness required in this space age production area?

Carl Schmid, Kearfott's plant engineer, says that 150 applicants were screened before the present staff of 24 was selected. "For the most part," he says, "we wanted people of even temperament who didn't mind being confined eight hours a day."

Good health is another stringent requirement. Anyone with a rash, skin ailment, or allergy was automatically turned down for the job. "Imagine the catastrophe," Schmid remarks, "if one of our workers should sneeze!"

Although the ultra-clean production facility has been operating less than a year, the Kearfott management has found its carefully protected workers have fewer colds, the report noted. Equal credit is given to the carefully balanced air conditioning system and to the high physical standards required of the worker.

More than satisfied with its Little Falls facility, Kearfott specified a similar application for its Asheville, N. C. plant, where Ross & Witmer, Carrier dealer, made the installation.



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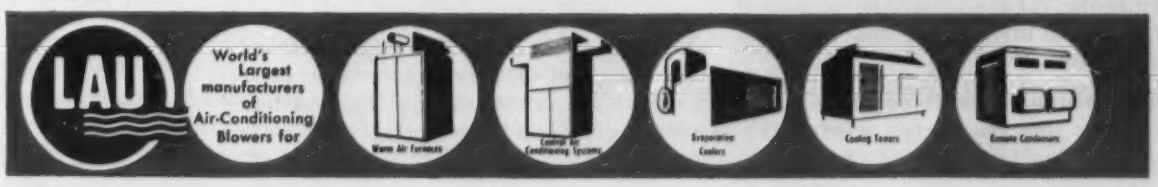

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by

Jimmy Hatlo

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LIKE A BIG EXEC TALKING
HEY!! BULLISTER! QUIT GOLDBRICKIN'! C'MON, GET THESE TO THE POST OFFICE!
SO NEXT TIME YOU'RE GOING TO BUY SOMETHING, YOU STOP IN TO SEE BULLISTER--
I'M THINKING OF BUYING A BLITZO POCKET RADIO AND YOU SAID...
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Self-Powered Complete Units Offer Great Promise

TODAY the world is in an uproar over power. And we don't mean political power, primarily; because that leverage actually depends on sources of mechanical power to run factories, propel aircraft, devastate areas and armies, etc.

The *real* power is *energy*.

Presently we take our energy sources from the Earth's crust—oil, gas, coal, water, wood, uranium.

These sources are waning, of course, and that's a prime reason why the U.S.A. is involved in the Middle East mess. Seventy per cent of the world's oil (presently the most facile source of power) lies underneath Arabian countries.

As for America, its oil and gas may be used up within the lifetime of some readers of this editorial. After the harnessing of the St. Lawrence, few possibilities remain for further water power exploitation on our continent. (Oops! Almost forgot Alaska.)

What, then, is the future for air conditioning, refrigeration, heating, etc.? They can't function without electric, steam, or gas power. Is slow strangulation of our industry a possibility in the lifetimes of our children?

Will power costs go up astronomically if we have to fall back on shale extraction, coal gasefication, the tides, dangerous atomic energy, solar-ray conversion (all inordinately expensive by current standards)?

The answer, thank goodness, is NO. Certain laboratory developments in terms of new power sources are exciting, indeed.

Matter of fact, self-powered complete units (cheaper to operate and maintain than anything now available) would seem to be just around the corner. By "complete units" one refers to package home and store air conditioning, refrigerators, freezers, commercial cases, etc.—devices which presently are "plugged in."

Most promising of all the self-powered possibilities is the Fuel Cell. In this proposed new type of "battery," carbon and air flow over an anode, cathode, and electrolyte. At the anode, oxide ions are consumed while the carbon undergoes electrochemical oxidation into carbon dioxide, thus releasing electrons to external circuits.

Thence electrons flow through the circuits to run a compressor (or whatever) and return to this new type of "battery" at its cathode. There they are recaptured by oxygen molecules to form oxide ions. Subsequent flow of these oxide ions through the electrolyte from the cathode to the anode completes the electric circuit.

Simplicity, plus elimination of expensive transmission lines, aren't the only bright promises of this projected Fuel Cell. There is a further outstanding advantage. Its efficiency is not limited *inherently* as is that of a heat engine (such as a steam turbine, or a V-8 gasoline motor).

Imaginative research engineers point out that there's a tremendous difference between unavoidable limitations and avoidable losses in the generation of power by various methods. You can do something about losses. But physical limitations are, well, limitations.

Progress in research, engineering, and manufacturing of conventional power producing equipment has reduced avoidable losses to a point where they are much less serious than the *unavoidable limitations* imposed by thermodynamic facts-of-life.

That "unavoidable limitation" on the conversion of heat into power, which is imposed on steam and combustion engines by immutable law, derives from the nature of heat itself.

All forms of energy *except heat* freely are interconvertible. This is a truth learned both from practical experience and laboratory experiments. You see, that species of molecular motion *which is heat itself* behaves irregularly and wildly. Heat, to a physicist, is an outlaw.

When converting heat into other forms of energy such as electricity, we must pay a price to overcome its randomness (as described first by the French physicist, Carnot). To be blunt, coal, gas, wood, and oil are woesomely inefficient as prime movers.

Theoretically, this Fuel Cell escapes the Carnot-cycle limitation of efficiency because it doesn't rely on heat. Rather, it converts chemical energy directly into electric energy, which short-circuits thieving dissipation factors involved in steam and gasoline engines.

Valence electrons which emit electrical power in a Fuel Cell are forced to do their job before the necessary chemical reaction is completed. Thus these electrons are compelled to work all the time, instead of intermittently and irregularly, as in the case of heat-power.

Therefore all chemical energy delivered by a Fuel Cell is converted into electricity, without waste. Thereafter and thereupon the Carnot-cycle limitation on engine efficiency does not apply.

Naturally, heat exchanges do occur when a Fuel Cell operates. However, please remember than a Fuel Cell can operate isothermally; whereas heat-stimulated devices (subject to the Carnot-cycle limitation) cannot.

As far as our industry is concerned, the Fuel Cell not only may supply energy more efficiently and economically than present methods, *but it has no theoretical limitations on size,* either.

Which means: in effect, a tiny generator could be packaged *inside* unitary equipment. No more male-female connections, transmission lines, monthly bills, or possible power interruptions. A true package, easier to sell and service, is promised by this laboratory development.

There's a Great Day Coming!

Selling is like picking apples. It's easy to stand on the ground and strip the low branches, and we say that business conditions are good. But, when he have to climb the tree to get those apples at the top, that's work. Thereupon we think that business conditions are beginning to get bad.—P. K. SIDELINER.

A man's mind is like his car. If it gets to knocking too much, he'd better have it overhauled or change it.—*Survey Bulletin.*

True talent reappears again despite opposition, because true talent cannot be kept down. Sooner or later it succeeds in reasserting itself, and its star will shine forever on the sky of recognition.—MARI ANNE SZELL KUBELIK.

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AIR CONDITIONING HEATING & REFRIGERATION NEWS

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'The Conscience of the Industry'

Published Every Monday by BUSINESS NEWS PUBLISHING CO., 450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924. Subscription Rates: U. S. and Possessions and Canada: $6.00 per year; 2 years, $9.00; 3 years, $12.00. All other countries: $10 per year. Single copy price, 40 cents. Ten or more copies, 30 cents; 50 or more copies, 20 cents each. Send remittance with order.

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VOLUME 88, NO. 5, SERIAL NO. 1,593, OCTOBER 5, 1959

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AIR CONDITIONING HEATING & REFRIGERATION **NEWS**

450 WEST FORT ST. DETROIT 26, MICH.

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1, Col. 1)

flowering hibiscus, sun-dappled vistas . . . they're all here. Plus that always spectacular combination of mesmerous blue ocean with a mountainous backdrop.

But the real news here is a remarkable business renaissance. Perhaps the word "renaissance," stretches history back a couple of hundred years. For all practical purposes, what's going on here literally is a *Birth of Business.*

At the rate of almost *three times a week* a new Puerto Rican branch or plant is opened by a "Mainland" U.S.A. firm.

Exports have quadrupled since the end of World War II, and wages have tripled. Total employment has soared.

San Juan's harbor is the busiest in the Caribbean area. Currently it is accommodating some 4,000,000 tons of cargo on an annual basis.

The people here not only *do* business, they *mean* business. It's an extraordinary story.

Free Enterprise In Action

Primarily this is a story of a determined people who determinedly chose free enterprise as a way out of their economic troubles. (This parallels the postwar history of Australia, West Germany, Belgium, Holland, Italy, Britain, and France-after-deGaulle.)

Ten years ago Puerto Rico was poor, desperately so. Its entire economy was dependent on the vagaries of the world sugar market. More people were unemployed than working steadily.

Then a remarkable thing happened. Leaders woke up to the fact that they were citizens of the United States of America. Why not "Americanize" themselves?

So they did. They decided to do three things: to diversify, to follow Uncle Sam's "free enterprise" principles, and to woo American business and industry.

Result: Puerto Rico now has the highest per capita income in all Latin America (except oil-rich Venezuela). And no longer does she have to export her unemployment to the slums of New York City.

Freedom from Taxes

What was Puerto Rico's "gimmick" in attracting American business? Simplest thing you could imagine.

Although the U.S.A. calls itself "the land of the free," there's one yearningly desirable freedom it doesn't have: *freedom from taxes.*

By an odd quirk of legal circumstances, this freedom Puerto Rico could (and does) offer. Although it shares our currency, courts, and citizenship—Puerto Rico elects no Senators or Representatives to our Congress.

Hence, neither corporate nor personal Federal income taxes apply in Puerto Rico!

What a lure that is to overtaxed American businessmen you can imagine. WHAT A GIMMICK!

Moreover, American firms are exempted from most local taxes for a period of 10 years—property taxes, municipal levies, and excise taxes on imports of raw materials, machinery, etc.

Soon as they wake up to this sensational situation, U.S.A. firms come a-running . . . and you can see why.

People and Markets Abundant

There's no labor problem here of *any* kind. Unions are quiescent. The people are moderately educated, manually dexterous, and highly appreciative of an opportunity to work steadily.

Both hourly rates and absenteeism are low. Morale and cooperativeness, along with productivity, are high.

Moreover, the P.R. Employment Service recruits this labor for you, and "screens" it.

To an American businessman "screening" means that he will be supplied with a list of five times as many employes as he may need, all of whom have been tested by modern psychometric methods.

Nor is that all. P.R. agencies will guide him over all legal, bilingual, and research hurdles.

PRIDCO (Puerto Rico Industrial Development Co.) will build a factory or office for you to your own specifications. Then you can lease it *for less than one dollar per square foot per year.*

O.K. So you've decided to set up in Puerto Rico—to save on corporation taxes, personal income taxes, dividends taxes, property taxes—and to benefit from an eager, unspoiled labor supply which isn't dominated by domineering union bosses.

Where then do you go with your products? Why, right back to the "Mainland." The 50 United States are Puerto Rico's biggest customers.

Venezuela, Mexico, Columbia, Brazil, Argentina—and the entire Caribbean archipelogo—are naturally growing and economically adjacent markets, also.

Fast and frequent shipping facilities are available at reasonable rates.

Would Your Family Be Happy In Puerto Rico?

What's it like to live in Puerto Rico? Well, golly, it isn't like the place you're living in now. But where else in the world is?

Puerto Rico is a pleasant, charming, salubrious *adopted* home. No icy winters . . . perpetual summertime. Modern shops, supermarkets, low-cost services and servants, relatively luxurious homes at Levittown prices.

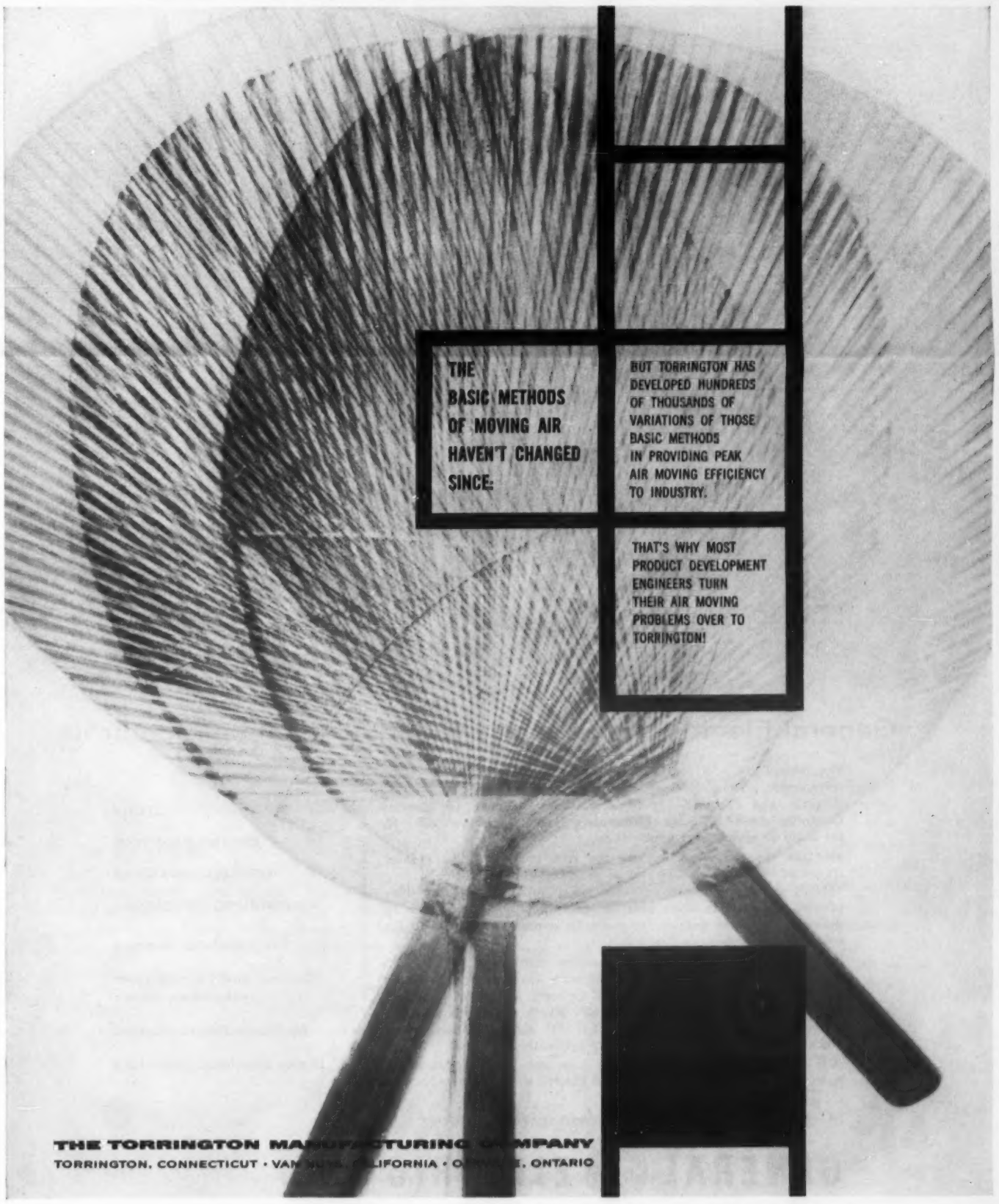
Unlike most tropical or semi-tropical spots, Puerto Rico is sanitary. You'll never need to swat a fly or a mosquito. Death rate is below that of continental U.S.A.

Schools are comparable to those in, say, many counties in Michigan. Likewise, entertainment facilities. Same movies. Same-type concerts, amateur theater, golf, boating, TV, radio, baseball, basketball . . . you name it, they have it.

Modern housing has proven satisfactory for continental American emigrants to Puerto Rican cities and suburbs.

Apartments rent, unfurnished, from $85 to $150 per month. Pretentious residences, or those in especially attractive locations, may rent from $125 to $300.

(Concluded on next page)


THE BASIC METHODS OF MOVING AIR HAVEN'T CHANGED SINCE:
BUT TORRINGTON HAS DEVELOPED HUNDREDS OF THOUSANDS OF VARIATIONS OF THOSE BASIC METHODS IN PROVIDING PEAK AIR MOVING EFFICIENCY TO INDUSTRY.
THAT'S WHY MOST PRODUCT DEVELOPMENT ENGINEERS TURN THEIR AIR MOVING PROBLEMS OVER TO TORRINGTON!
THE TORRINGTON MANUFACTURING COMPANY
TORRINGTON, CONNECTICUT · VAN NUYS, CALIFORNIA · ONTARIO, ONTARIO

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from preceding page)

Furnished homes go $50 to $75 per month higher. Rentals are lower in small towns.

Electricity will cost $10 to $15 per month, water $3 to $6, gas $3, and telephone service $6 in San Juan (less in other towns).

Prices on imported items may range from 5% to 30% higher than on the mainland. Effect on the over-all cost of living is offset, however, by "cheap" personal services, inexpensive foods and liquor, and by the fact that you don't have to buy winter clothing and heating.

Women wear summer things—slacks and shorts, a stole or light wrap for evenings, dresses for dancing. Men wear washable suits, slacks, and sport shirts.

Average temperatures vary only 5.5° between winter and summer. For example, north coast temperatures average 74.5° in winter and 80° in summer. It is usually 10° cooler in the nearby mountains. There is no rainy season. The sun shines 360 days a year.

A number of private schools, both sectarian and non-sectarian, conduct all classes in English.

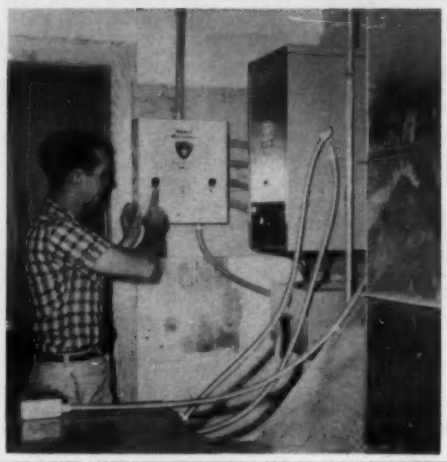
Higher education is offered at the University of Puerto Rico, the Polytechnic Institute, and at Santa Maria university.

Puerto Rico has a modern system of hospitals, both private and public, and a large body of physicians, dentists, and medical specialists—most of whom have been trained in the United States proper.

All of these facts may be pertinent, but they are secondary to the Big Lure: freedom from taxes.

Highest Bidder Got Contract

Clean Air, Humidity Control Landed Bowling Lane Job without Price Cutting



TRION electronic air cleaner is said to keep building free of smoke regardless of size of crowd in bowling alley. This and the humidity control provided by the system were credited by the contractor for his winning the contract in spite of having the highest bid.

BEEVILLE, Texas — Beeville Industries, Inc. here has built a profitable commercial air conditioning volume the past two years largely by remaining aloof to price pressure, figuring the job to include exactly what it should have for adequate conditioning, and resting its argument on its presentation of the figures and plan, according to the management.

The concern was purchased about three years ago by Lincoln Borglum, nationally-known sculptor in his own right and son of Gutzon Borglum whose collosal sculpturing made him a world-wide figure.

At that time, the company had installed one York central air conditioning unit in the years it had operated.

The new ownership barely got started with its program of selling before the main season ended the first year of its ownership, so actually the program has been under way only two years. In that time the company has sold and installed 22 central air conditioning jobs, mostly commercial installations.

'Too Much Price Selling'

"There was too much price-selling at the time we took over the company," explained R. E. (Bob) Bower, company manager and stockholder.

"So we reasoned that if we were going to make money out of air conditioning we must make an opposite appeal: Recommend the right installation for the job and let the cost figures total whatever the specifications dictated, then sell the prospect on the long-term value of the installation instead of allowing him to concentrate on initial cost."

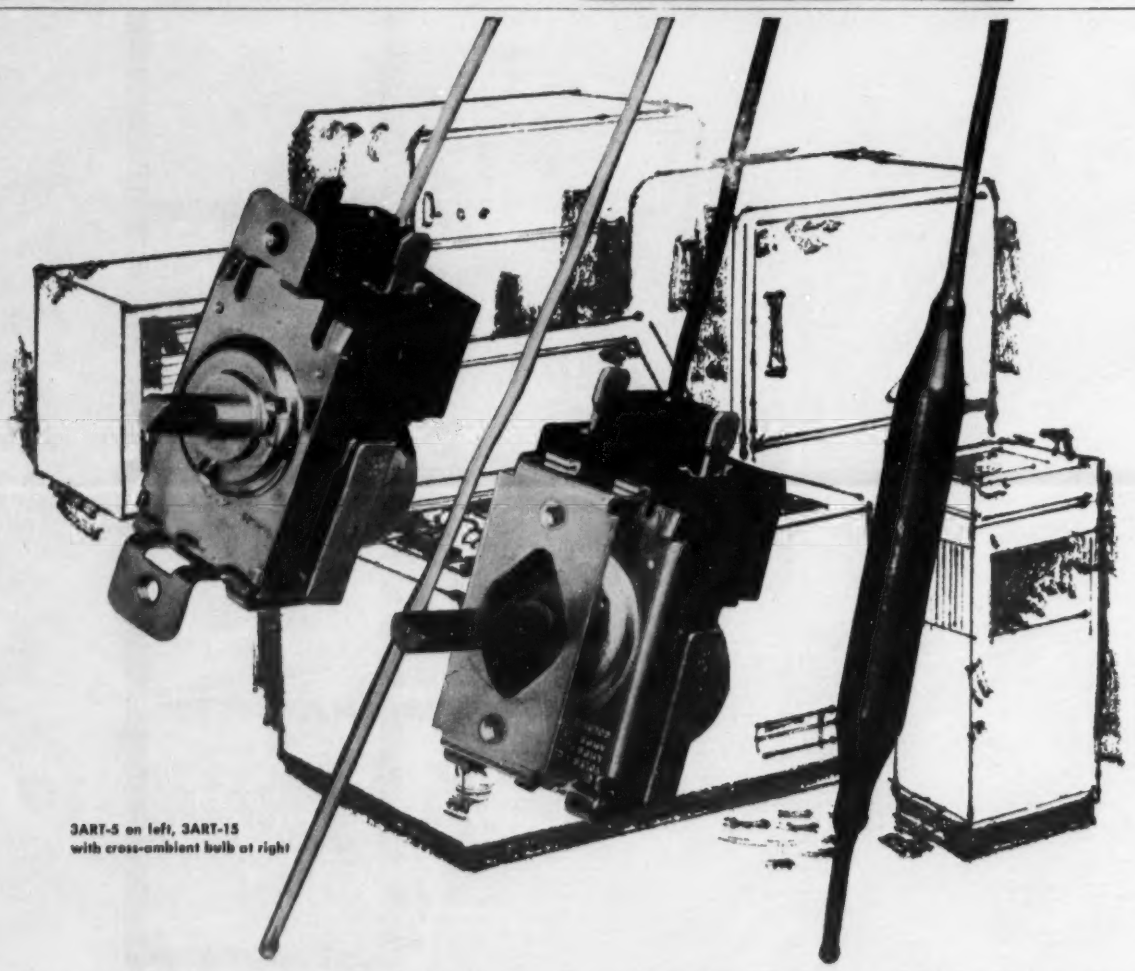
Bowling Alley Job Illustrates Policy

A typical case that illustrates the company's policy was a recent installation of the air conditioning and heating system in a new bowling plant at Beeville.

The management of the new recreation center spent extra money in order to have an ultra-modern bowling center, and Beeville Industries, when asked to bid on air conditioning-heating installation, stressed from the outset that the job should not be let on a price basis but on the basis of the installation's conforming in every respect to the remainder of the plant.

The company studied the cooling and heating problem at length, taking into consideration particularly the variation in crowds that would use the building, and recommended a 30-ton electrostatic constant filter control installation, completely air cooled.

"We recommended this type of installation, even though it was completely new in this part of the country, because we knew what the management of the bowling center would be up against in the matter of humidity and cigarette and cigar smoke," Bowers said.



3ART-5 on left, 3ART-15 with cross-ambient bulb at right

General Electric announces two NEW small cold controls

For dependable, yet inexpensive, temperature control of modern refrigerators, home freezers, and air conditioning units, General Electric now offers two completely new Constant Differential Controls—the 3ART-5 for refrigeration systems, and the 3ART-15 for room air conditioner applications.

SMALLER than previous models, the new controls allow greater choice of location and they can be mounted in any position.

Both these new small controls incorporate General Electric's proved design that gives you an exceptionally wide choice of differentials—from narrow for room air conditioners, to wide for refrigeration systems.

NEWEST ADDITIONS to G.E.'s refrigeration control line, the 3ART-5 and 3ART-15 controls are designed and manufactured with the same detailed precision that makes General Electric a leader in high quality controls for refrigeration. Every unit undergoes exhaustive tests so that you can install it with complete assurance of mechanical dependability and minute calibration accuracy.

FOR MORE INFORMATION, contact your nearby G-E Apparatus Sales Office, or write 740-139, General Electric Co., Schenectady, N.Y.

QUALITY CONTROLS FOR YOUR REFRIGERATION AND AIR CONDITIONING APPLICATIONS

Temperature controls

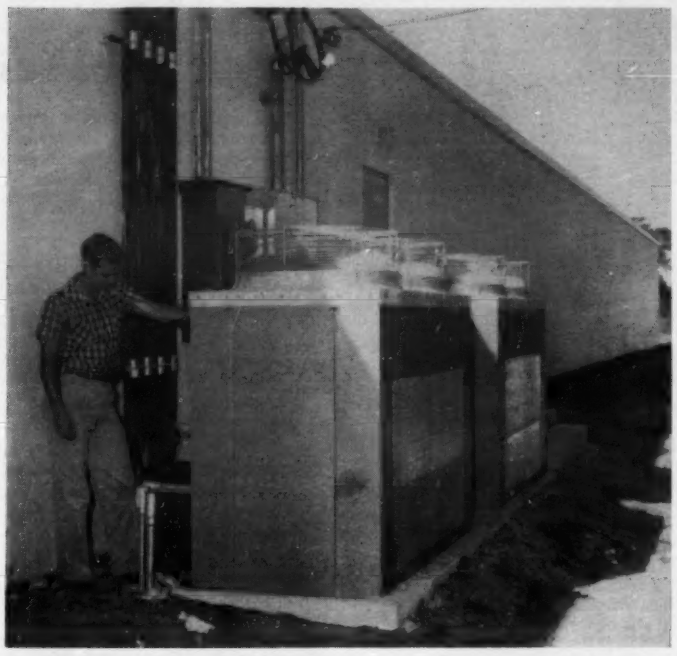
Current and voltage-type accelerating relays

Magnetic line contactors

Motor overload protectors

Progress Is Our Most Important Product

GENERAL ELECTRIC



AIR-COOLED condensers were located outside bowling alley in Beeville, Texas.

The management of the new bowling center recognized the importance of controlling these two elements and, convinced that Bowers and Borglum knew what they were talking about, accepted the company bid. It was the highest submitted.

The installation consists of four 7½-ton compressors, wired to kick on and off thermostatically, as the heat and humidity of the center requires. A modulating valve on the boiler makes the unit a heater in winter, as well as humidity-control operation.

A Trion electronic air cleaner keeps the center free from smoke haze by use of a wash-down unit. The system had an excellent test on opening night, when more than 300 men and women packed in for several hours.

In spite of the humidity and excessive smoking, the humidity level remained constant and there was no accumulation of smell of smoke at any time.

The air-cooled condensing section is outside the building, adjacent to the wall.

Now Representing...

Fedders Corp. — KLEIN-DICKERT CO., INC., Madison, Wis., has been named exclusive wholesale distributor for room and central air conditioners and dehumidifiers. The distributor will cover a large portion of Wisconsin—a total of 49 counties—and 15 counties in northern Michigan, with John Graves heading sales of the Fedders line.

Gibson Refrigerator Co., Div. of Hupp Corp.—J. A. WILLIAMS CO. of Pittsburgh has been named distributor of Gibson white goods in the area formerly covered by Ott-Heiskell Co., Wheeling, W. Va., and Elias Distributors of Pittsburgh. In addition, it will handle some fringe counties in Ohio.

The Payne Co. — KENNETH JUNKER was named factory representative for heating and air conditioning products in Minnesota, Iowa, and North and South Dakota.

Pacific Steel Boiler Div., National-U. S. Radiator Corp.—A new sales office has been established to cover the nine far western counties in Virginia. The O. M. JONES CO., Johnson City, Tenn., has been appointed sales representative for the area.

R. P. FEDDER, Rochester, N. Y., is the new sales representative for the Rochester area. WILSON-BRINKER ASSOCIATES, INC., Kalamazoo, Mich., will represent Pacific in western Michigan. HEET-FLO CO., Los Angeles, is the new sales representative for that area. MASON & BARRY, INC., Charleston, W. Va., will promote the sale of Pacific heating products in that state.

Oil Heat Div., Webster Electric Co. (Racine, Wis.)—L. E. WOOLF has been appointed sales representative for Alabama, Delaware, Florida, Georgia, Maryland, Mississippi, New Jersey, North and South Carolina, Virginia, most of Pennsylvania, some areas of New York City, and Washington, D. C.

Rittling Corp.—CONSOLIDATED SUPPLY CO., Baltimore, has been appointed sales representative for Maryland, west to and including Frederick County, exclusive of Cecil County and Washington, D. C. The firm will also cover Sussex and Kent counties in Delaware. WILLIAM A. SLACK, New York City, was named sales representative for the Manhattan New York and West Chester County area.

Recold Corp. — ARCHER-HINMAN SUPPLY CO., Tulsa, Okla., has been named as the new Recold wholesaler for refrigeration products in the Tulsa trading area.

Standard Tube Co. — FRED W. BUSH, Dallas, has been named sales representative in the Southwest.

Young Radiator Co. — J. P. ELLIOTT was appointed manufacturer's representative for the Buffalo area. He will represent the Heating, Cooling & Air Conditioning Div.

Williams Oil-O-Matic Heating Co. — TEMPCO, INC., Fernwood, Pa., has been named distributor for heating and cooling equipment in the Philadelphia trading area.

Why try to kill algae like this...

USE CALGON® ALGAECIDE

Calgon's Algaecide kills slime and algae fast — helps keep cooling water system operating at top efficiency. Get a supply from your Refrigeration Wholesaler today.

CALGON COMPANY

DIVISION OF HAGAN CHEMICALS & CONTROLS, INC.

HAGAN BUILDING, PITTSBURGH 30, PA.

In Canada: Hagan Corporation (Canada) Limited, Toronto

THE NEW "Hot Rod" ELECTRIC DEFROST SYSTEM by McQuay

The new McQuay Hot Rod electric defrost unit cooler gets its name from the brass sheathed calrod heating elements which run through the center section and rapidly defrost the coil. All models of the Hot Rod unit cooler feature casings of hammered aluminum, and are equipped with built-in heat exchangers. McQuay proven quality construction provides direct metallic contact between the heating elements and aluminum fins giving you more complete, trouble-free refrigeration with automatic electric defrosting and without wasting heat. The aluminum drain pan is heated electrically for positive de-icing. All electric heating elements, both fin coil and drain pan, are accessible and easily removable without disturbing the coil or drain pan.

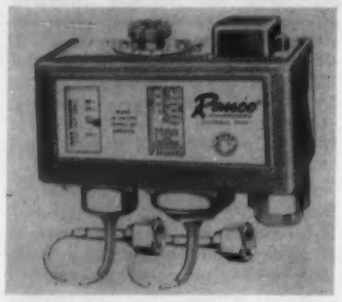
There are eight sizes of McQuay Hot Rod systems ranging in capacity from 3,000 to 32,000 Btu/hr at 10° T.D. Contact the McQuay wholesaler in or near your city, or write McQuay, Inc., 1607 Broadway Street N.E., Minneapolis 13, Minnesota.

McQuay Means Quality

McQuay INC.

AIR CONDITIONING • HEATING • REFRIGERATION

3 Series of Double-Pole Controls Introduced



● Three new series of double-pole, single-throw type refrigeration and air conditioning controls engineered to handle a wide variety of commercial applications have been introduced by Ranco Inc., Columbus 1, Ohio.

Designated the 5000, 6000, and 7000 Series in Ranco's new line of double-pole "O" type switches, the controls are available in single unit models for low pressure, high pressure, and temperature; and in dual models for dual pressure or dual temperature, it was noted.

The units are designed for two-pole switching jobs—such as a double break for single-phase operations, simultaneous switching of two circuits, or switching two lines of a three-phase circuit.

Model 020 single-unit controls have standard switch action—with contacts opening on decrease in pressure or temperature. Model 021 single units have reverse switch action—with contacts opening on increase in pressure or temperature. Model 022 dual controls combine high pressure with either low pressure or temperature, using one set of contacts. On dual controls, both sides operate automatically.

An available feature on the 021 and 022 new controls is a safety (High) limit stop the same as is available on the present 011, 012, 014, 016, and 017 types.

The controls handle one, two, and three-phase overload protected motors of ½ through 5-hp. capacity.

Low-Cost Motorized Damper Actuators Bowed

● A new line of low voltage, motorized "Zone-A-Trol" damper actuators said to provide an easy, low-cost method of installing room by room temperature control on any new or existing air conditioning or warm air heating system is available from Econo Products Co., Dept. AH&RN, East Haddam, Conn.

"Installing on the air supply ducts to each room or zone, a corresponding thermostat controls each damper actuator," it was pointed out. "As the thermostat calls for heating or cooling, the Zone-A-Trol automatically opens the damper and lets the air flow until the thermostat is satisfied, and then the damper automatically closes."

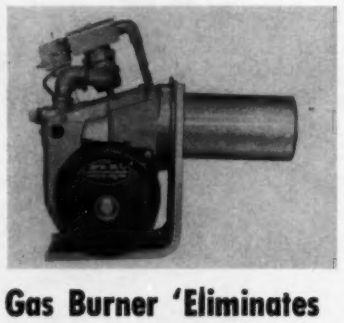
The actuators install on any position, shape, or size ductwork up to 22 in., and are furnished with all necessary parts with the exception of the ductwork and damper vane, which the installer fabricates by cutting a piece of sheet metal to the shape and size of the particular duct, the manufacturer pointed out.

Portable Phase Sequence Indicator Available

● A new pocket portable instrument for indicating phase sequence in three-phase power systems is offered by Associated Research, Inc., Dept. AH&RN, 3777 W. Belmont Ave., Chicago 18.

The model 40 is for 60 c. power and has a switch for adjustment to 120, 240, and 480 v. Convenient pocket size is 3 in. by 5 in. by 2 in. It has no moving parts or batteries.

"The three insulated test leads are connected at random to the three-phase conductors," it was explained. "When the lamp marked 'ABC' glows, the sequence is as designated by the test leads. If the lamp marked 'CBA' glows, the phase sequence is the reverse of the lead designation."

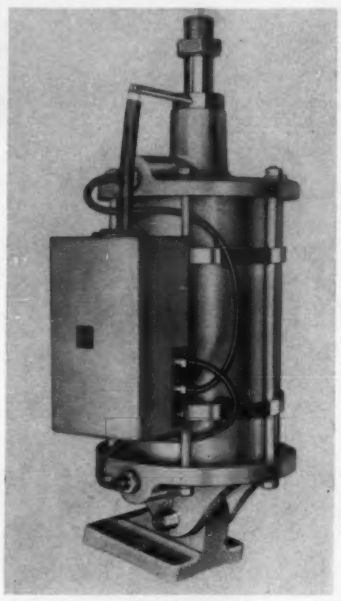


Gas Burner 'Eliminates Rumbles and Booms'

● A new, automatic "Wondaire" power gas burner has been made available to the heating industry by Cox Mfg. Co., Dept. AH&RN, Ridgeville, Ind.

According to the manufacturer, this burner eliminates "rumbles" and "booms" when starting or stopping. It also has a special "flame retainer" that "utilizes more of the heat produced—helps the furnace do a better job with lower operating costs," the company claims.

The completely assembled unit is shipped ready to install.



Compact Pneumatic Motor Announced

● A compact pneumatic motor "that has a cylinder volume of only 126 cu. in. yet provides 120 ft.-lbs. of torque and a 7-in. stroke" was announced by The Powers Regulator Co., Dept. AH&RN, 3434 Oakton St., Skokie, Ill.

Called the Type LC (Large Capacity), the piston-type motor is 75% smaller than the double diaphragm motor it replaces, the company said. It can be mounted in any position to control vortex dampers, inlet vanes of refrigeration compressors, and large dampers.

A "power package" containing a positioning relay and a reverse relay powers the motor. The relays amplify the air signal from the controlling instrument to provide the air volume necessary to move the piston and position the motor quickly.

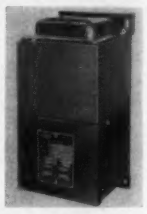
Want More Details?

ADDITIONAL details on products that are described on these pages may be obtained by writing the manufacturer at the address given in each What's New story.

Tell him: "AH&RN sent me!"

Acme Redesigns Boost And Buck Transformers

● Its redesigned line of boost and buck transformers features wiring compartment connection taps to provide increasing line voltage 6.66, 10, 13.32, 20, or 26.64%; or reducing line voltage 4.75, 6.25, 9.1, 10, or 11.8%, according to Acme Electric Corp., Dept. AH&RN, Cuba, N. Y.



A new catalog, 5A3, describing this line includes two graphs, for calculating correction of voltage to 115-120, and 230-240 volts as a quick method of determining per cent of voltage correction required, the company said. Thirteen reference charts covering the corrective factors show KVA capacity of transformers at various voltage connections, with a direct reference to the size of transformer necessary for the application.

FIND·FIX
Refrigerant* Leaks
FAST
with the
PREST-O-LITE
Trade Mark
Refrigeration and Air-Conditioning Outfit

This one handy, compact outfit is all you need to find and fix refrigerant gas leaks. Sensitive leak detector "sniffs" as little as 100 parts of halide refrigerant* in a million parts of air... *in seconds*, pinpoints leaks too small to show up in soapy water. Also included in the outfit are 3 sizes of torch stems for open-flame soldering, heating, and brazing; an adjustable gas pressure regulator; interchangeable torch handle; hose; enameled steel carrying case. Models for use with B or MC PREST-O-LITE acetylene tank.

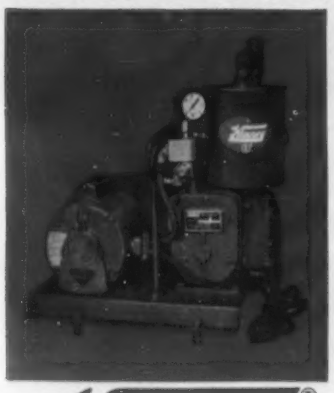
*ASRE numbers 11, 12, 13, 14, 21, 22, 113, 114

$43.00 COMPLETE

PREST-O-LITE air-acetylene equipment and small tanks are available from your local supplier of LINDE products. See him today. Or write for further information to: Dept. 624, LINDE COMPANY, Division of Union Carbide Corporation, 30 East 42nd St., New York 17, N. Y.

"Prest-O-Lite," "Linde" and "Union Carbide" are registered trade marks of Union Carbide Corporation.

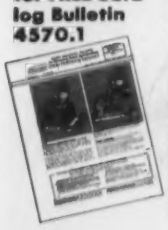
A Cleaner, Drier System, AND Quick, Profitable Service . . .



Kinney® FEATURES TWO NEW PORTABLE HIGH VACUUM PUMPS

KINNEY KC-3R and KC-8R Portable High Vacuum Pumps are proving important money-makers for servicing Freon Refrigeration and Air Conditioning Systems up to 10 ton size. These gas-ballasted KINNEY Pumps leak test, evacuate and dehydrate the system *quickly*. They're built for rugged day-in-and-day-out service and, being portable, are always ready... in the shop or out on the job. Get the advantages of these KINNEY Pumps for your service operations — write for prices today.

Write for FREE Catalog Bulletin 4570.1



KINNEY MFG. DIVISION
THE NEW YORK AIR BRAKE COMPANY
3617K WASHINGTON STREET • BOSTON 30 • MASS.

Please send me, without obligation, Bulletin 4570.1 with full information on KC-3R and KC-8R Pumps.

Name_____

Company_____

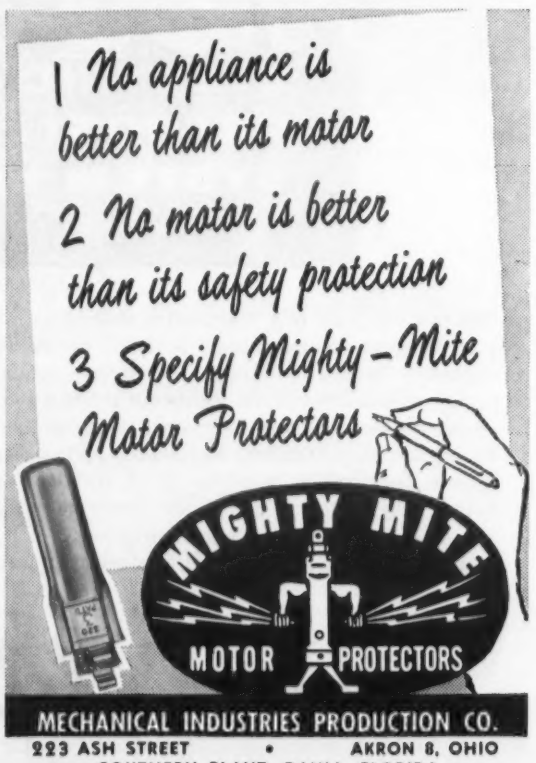
Address_____

City_____ Zone____ State_____

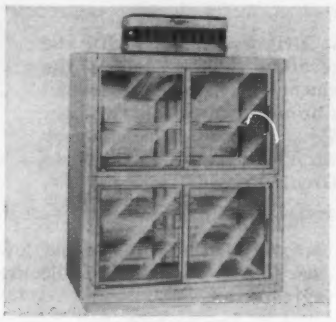
1 No appliance is better than its motor

2 No motor is better than its safety protection

3 Specify Mighty-Mite Motor Protectors



MECHANICAL INDUSTRIES PRODUCTION CO.
223 ASH STREET • AKRON 8, OHIO
SOUTHERN PLANT: DANIA, FLORIDA



Display Case Features Accessibility, Visibility

● A new "Victory V-line" refrigerator display case featuring specially constructed insulated type glass doors that ride on stainless steel anti-friction roller bearings is offered by Victory Metal Mfg. Corp., Dept. AH&RN, Plymouth Meeting, Pa.

The company stressed the accessibility and visibility of the case, which is equipped with adjustable type heavy-duty shelving.

The doors are designed to provide an airtight seal when they are fully closed. The air flow is directed through an integral duct system for efficiency, regardless of product loading arrangements.

Increase Ratings On 'Torkmasters'

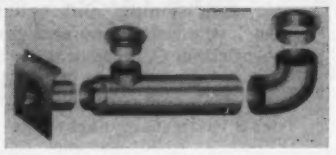
● Increased ratings for the "Torkmaster" line were announced by Tork Time Controls, Inc., Dept. AH&RN, Mount Vernon, N. Y.

Formerly rated at 35 amps., both the model 948 (single pole) and the model 954 (double pole) Torkmaster time switches are now UL approved at 40 amps., the company said.

"The Torkmaster is used wherever economy is a prime factor in the automatic on-off control of lighting or electrical equipment," it was stated. "Available in the standard 24-hour dial, the units provide for setting the same on-off times each day. Any number of schedules, adjustable in 15-minute intervals, may be scheduled on the one dial."

The 40-amp.-rated Torkmasters list at $11.95 for the 948 and at $13.95 for the 954.

Pressurizer Claims Healthier Home, Lower Cost



● Healthier home living with lower fuel bills, and greater comfort, are the claims made by Rymco, Inc., Dept. AH&RN, 1627 W. Fort St., Detroit 16, for its new "Dibert Pressurizer."

"More than 500 Dibert Pressurizers have been installed in the Flint, Mich. market during the past two years," the company said. "Extensive tests have been conducted on these units, and modifications of the original equipment have been made. Mass production of the unit is now under way.

"The Dibert Pressurizer, for which patents are pending, takes air from outside the home, passes it through a manifold where it is preheated before being fed into the cold side of the furnace. A bi-metal control regulates the quantity of air brought into the home.

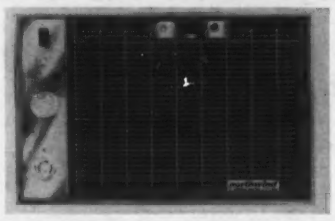
"Present equipment is suitable for installation with blower type furnaces only."

Uni-Crest Pipe Covering Available In 3 Sizes

● Availability of pipe covering made of "Uni-Crest" expanded polystyrene for a wide range of design conditions has been announced by United Cork Cos., Dept. AH&RN, Central Ave., Kearny, N. J.

The pipe covering is available in three standard sizes in both regular or self-extinguishing types: Light duty—nominal 1 in. for temperatures above freezing; medium duty—nominal 1½ in. for temperatures of 32° F.; and heavy duty—nominal 2 in. for temperatures of 0° to -30° F.

Introduces 'Year-Round Health Unit'



● Described as a year-round health unit, an "Electron Air" which provides air conditioning and also has a built-in ion generator was announced recently by Emerson Electric Mfg. Co., Dept. AH&RN, 8100 Florissant Ave., St. Louis 36.

The generator produces negative ions so necessary, according to the American College of Chest Physicians, for a general feeling of well being, the company pointed out.

Research at the University of California is said to have shown that an excess of positive ions in the air is injurious to the human respiratory system.

"The Electron Air ion generator produces the more healthfully beneficial negative ions by passing electrical current through activated tritium," the company explained. "These . . . ions combine with and neutralize the discomforting, injurious positive ions. This neutralizing process has an invigorating effect upon most people and makes ordinarily sensitive persons, as well as hay fever and asthma sufferers, feel immensely better."

Used separately, the Electron Air's negative ion generator "is particularly beneficial in winter months when house-trapped, stale air tends to become saturated with positive ions through constant use of common heating equipment," it was stated. During the summer, the Electron Air's 1-ton air conditioning unit "provides cooled, invigorating air plus freedom from respiratory ailments."

You can't wrap the system in cellophane...

PROTECT IT WITH BANOX®

Forms a molecular film on all metal surfaces contacted by recirculating water. Condenser, pump and water lines are protected against corrosion. Use at Spring start-up — after acid cleaning—at shut down. Get Banox from your Refrigeration Wholesaler today.

CALGON COMPANY

DIVISION OF HAGAN CHEMICALS & CONTROLS, INC.

HAGAN BUILDING, PITTSBURGH 30, PA.

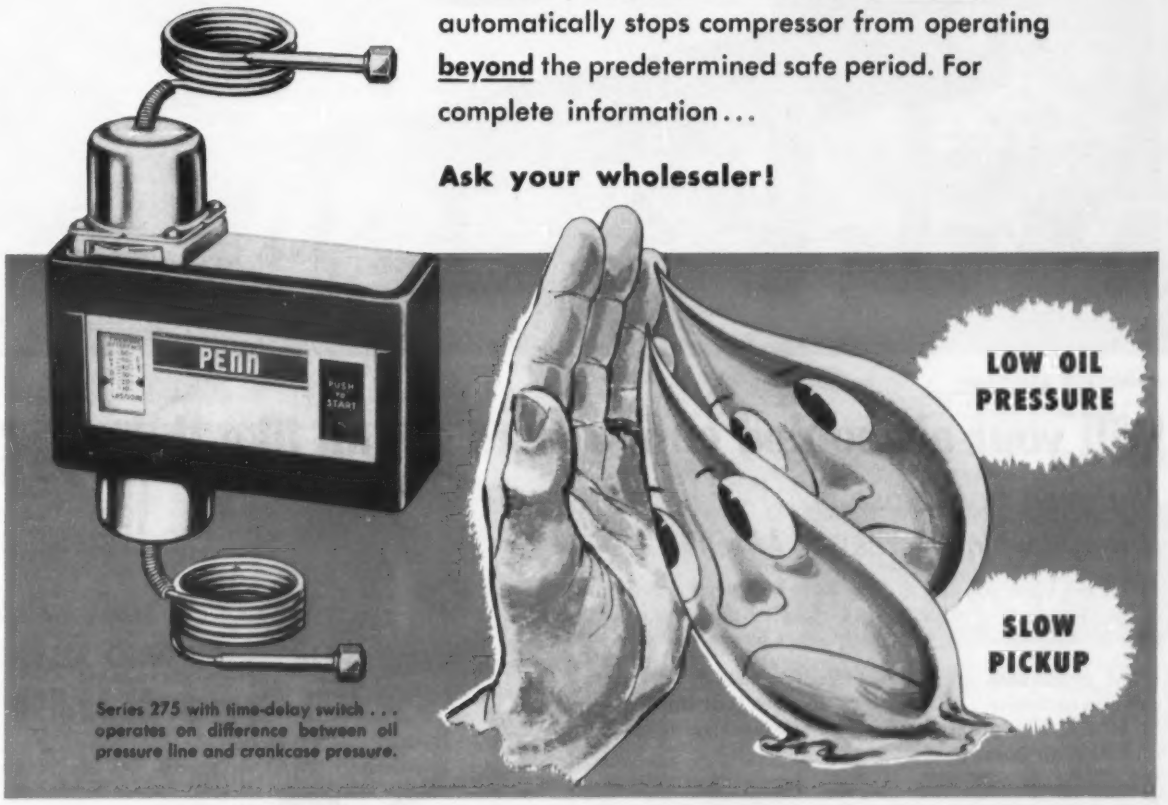
In Canada: Hagan Corporation (Canada) Limited, Toronto

STOP slow pickup or low oil pressure from crippling pressure-lubricated refrigeration compressors!

Even the best refrigeration compressors can be attacked by the "destructive pair"...slow pickup of oil pressure at the start of a cycle or low oil pressure during the running cycle. When it occurs...seals and bearings are in danger!

To prevent such damage and loss of operating time, install the Penn 275 control. Then, any time subnormal oil pressure develops, this control automatically stops compressor from operating beyond the predetermined safe period. For complete information...

Ask your wholesaler!



Series 275 with time-delay switch . . . operates on difference between oil pressure line and crankcase pressure.

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

British Commonwealth As a Market

(2) *Areas Outside British Isles Include Underdeveloped Countries That Can't Afford Cooling; Others Strive To Produce Own*

How a citizen of Great Britain familiar with the air conditioning and refrigeration industry views the market possibilities and problems in Great Britain and the British Commonwealth is brought out in this two-part article. Leo Walter, A.M.H.V.E., is a consulting engineer and technical writer. The first portion of the article dealt with the market in Great Britain proper.

By Leo Walter, A.M.H.V.E.

A great amount of the existing manufacturing capacity for air conditioning and refrigerating equipment in Great Britain is absorbed by export orders from countries within the Commonwealth. In nearly all overseas territories linked to the mother country by the mysterious and undefinable term of "Commonwealth," to which may be added very great areas of colonial "possessions," the need for air conditioning plants is rapidly growing. Developments in standard of living, and in industrial plants serve to get the people to realize that air conditioning is essential if they endeavor to live better and produce more.

Here again, the U.S. manufacturer should not make the mistake to judge potentialities according to American standards. But even when cutting down potentialities at, say one tenth, the possibilities for marketing in these countries are enormous. There is no need for a lot of education.

Everybody in British territories in Africa and Asia, and in Commonwealth countries such as India, Pakistan, Australia, the Union of South Africa, Ceylon, and other places would like to have some form of refrigeration and air conditioning. The obstacles for marketing are basically the same, as in Great Britain, but more pronounced. The so-called underdeveloped countries have little financial means for anything above the bare necessities of life. The developed countries such as Australia would like to manufacture such products on their own.

American capital invested in British manufacturing firms is in many respects much better off than when trying to export directly from U.S. factories into Commonwealth countries. What seems at the present time a "vicious circle," namely higher prices of the end product made in Great Britain, in spite of lower wages, etc., as compared with high cost of labor and material in U.S.A., and medium prices due to mass production methods in U.S. may one day be radically changed.

The ultimate prices of British made goods will be lower, and if made under American license will be the best means for penetrating the Commonwealth markets. It is often wise to be less greedy for profits and to be satisfied with a reasonable low margin, as derived from license agreements.

TECHNICAL DEVELOPMENTS

In the matter of technical developments in Great Britain in the air conditioning and commercial refrigeration fields, the fact is that the actual design of British-made equipment is nearly as modern as equipment made in U.S. The fact that many items are made in smaller quantities and by old-established methods of manufacture is not necessarily detrimental to quality. To the contrary, some feel that often "hand-made" British units stand up better to tropical conditions and to rough handling by unskilled labor overseas, than U.S. made equipment using all refinements of fully automatic manufacture.

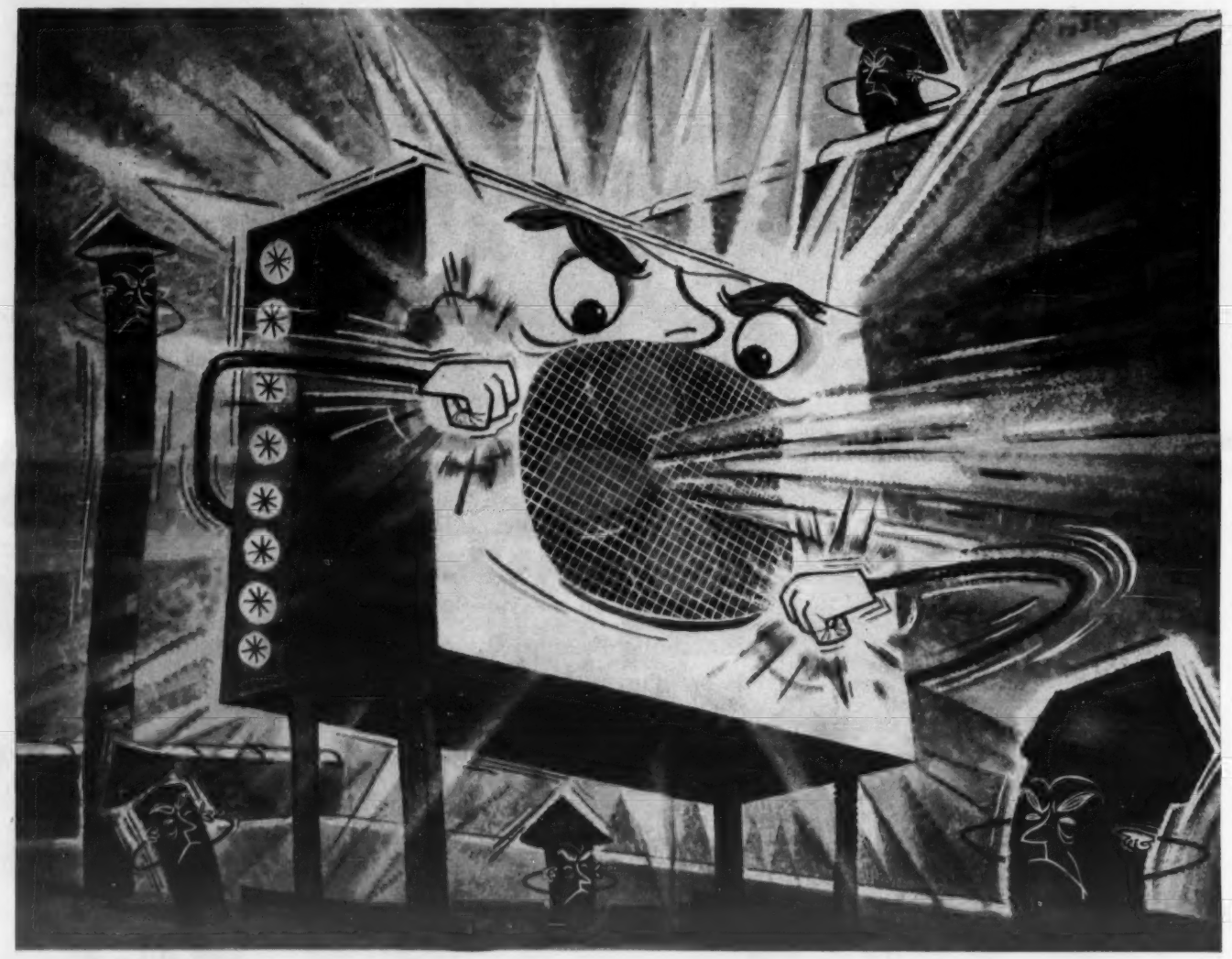
British manufacturers and British design engineers are fully aware of new technical developments in U.S., and they are quick to apply anything and to incorporate it into their designs which promises real improvements. They don't, however, always see eye to eye with their American counterparts and are more conservative.

Any novelty applied in design and introduced into the home—and the Commonwealth market has to be well tried and proved in prolonged practice. This is a point which is not always understood in U.S., where a manufacturer is keen to try everything new as quickly as possible, and sometimes to market it and mass produce it with disastrous results.

There is usually a time lag of one to three years between manufactured new designs in U.S. and in Great Britain, but this is not due to lack of knowledge or of ingenuity on part of British manufacturers or designers. This delay is deliberate and well planned.

Life is less hectic over here, and it is considered a great virtue to "wait and see." The loss of revenue during an interim period will more often than not be made up by avoiding "teething troubles" with new designs, and from the possibility to learn from other people's mistakes, free of charge. As a matter of fact, those in the industry think some of the newest British designs show considerable improvements over their original U.S. prototypes, and many a licensee manufactures better products over here than the licensor in U.S.

Summing up, the writer advocates more numerous granting of licenses on patented U.S. designs to established British manufacturers of kindred equipment, or setting up of factories in parts of Great Britain where labor is available, such as in certain parts of Scotland, or Wales. Cooperation should be the watchword, and not throat-cutting competition between two countries, which speak (nearly) the same language.



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TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

Bryant Absorption Unit (2)

A fuller understanding of the Bryant absorption cycle comes from following temperature and pressure changes as the unit operates. It will be helpful if the reader will refer to Fig. 1 published with the first portion of this discussion.

In the generator, where the gas flame is acting directly on the weak solution, the temperature normally varies from 285-310° F. As the strong solution leaves the heat exchanger its temperature has dropped to 155-170°. Even after the strong solution has passed through the solution restrictor and dropped in pressure, its temperature is about the same.

By the time the strong solution and ammonia vapor have formed weak solution, the temperature in the inlet tank is 125-135°.

Ammonia vapor traveling from the separator, through the analyzer and rectifier, leaves the rectifier, at 160-180°, and the condensed liquid ammonia leaving the condenser and entering the restrictor strainer is at 100-110°. Ammonia vapor leaves the chiller and enters the absorber at 55-60°. (Superheated ammonia.)

All the above operating temperatures apply at 95° ambient. At this same ambient, high-side pressure—condensing pressures—is 270-290 p.s.i.; low-side pressure, taken at the absorber, is 52-58 p.s.i. The unit has a manual reset high temperature cut-out and a recycling high pressure cut-out switch. A rupture disk relief device operates at a predetermined setting.

Operating temperatures and pressures will naturally vary with ambient, but differentials should remain relatively constant.

Except for the fan motor, which moves 4,500 c.f.m. over the condenser and absorber and the chilled water pump, the only moving parts in the Bryant absorption air conditioner are the solenoid valves, the float, two solution check valves, and a **blow-down valve.**

AN INSIDE VIEW of the Bryant gas-fired air conditioner. Comparison with Fig. 1, published last week, will enable identification of key components.

The solenoids—one low side, the other high side operate to isolate high and low-side pressure during filling and emptying of the trap. The blow-down valve allows the high pressure vapor in the trap to equalize with the bottom of the absorber when the low-side solenoid opens, equalization occurs, solution will flow by gravity from the inlet tank into the trap.

In operation, a "trap cycle" occurs five times in every 186-204 seconds—about once every 37-41 second. Filling time of the trap is variable, but emptying time is fixed at 15 seconds by a synchronous motor and cam assembly.

To service components above the liquid level of the unit—the solenoids, for example—it is necessary only to purge vapor into a bucket of water from a service valve located atop the trap inlet tank. Ammonia men will recall the characteristic crackle which is heard when ammonia is absorbed into water.

This inlet tank service may also be used for adding ammonia, adding solution, and taking low-side pressure readings.

To service components below the liquid level of the unit, solution is drained from the absorber and/or generator. Incidentally, the water solution used in the Bryant unit is made with distilled water and with carefully measured quantities of chemical inhibitors.

The second of four service valves is on the line running from the generator reservoir to the generator. Through this valve, solution may be drained from the unit whether it is running or not; solution may be added when the system is NOT operating; high pressure readings can be taken.

Solution operating level may be checked through the service valve on the bottom of the generator reservoir—while the unit is operating. High-side pressure readings may also be taken there.

At the bottom of the absorber, a service valve allows the taking of low-pressure readings, adding liquid refrigerant—with the unit operating or not, draining the low side of the machine when the unit is inoperative.

Study of Fig. 1 indicates that once the weak solution has passed the last check valve, nothing can prevent its reaching the generator—line sizes are ample; no blocking can occur, according to Bryant.

Timing the trap cycle is a basic and valuable service procedure on the Bryant line.

Since the Bryant absorption system always operates on positive pressure, never on vacuum, any leaks—high side or low side—will be OUTWARD. If a leak occurs above the liquid level, the telltale ammonia odor will reveal its existence. A leak below the liquid level will show itself by yellow stains due to the inhibited water solution used.

As is true in all work with ammonia, no copper or brass parts are used—either on the unit or in any service work. Service tubing, fittings, gauges, buckets, everything used to handle the ammonia refrigerant or solutions must be made of aluminum or steel.

Re-Strib Holds Clinic On Service Problems In Salt Lake City

SALT LAKE CITY — Refrigeration Distributors Corp. here, welcomed servicemen and contractors recently at its three-day Service Problem Clinic designed to "bring together the men with the questions and the men with the answers," according to Rudy Rowton, Re-Strib-Co. sales engineer.

Servicemen and contractors were encouraged personally to discuss their problems with the factory representatives of Recold Corp., Tecumseh Products Co., Sporlan Valve Co., and Chemical Solvent Co. Manufacturers' exhibits featured cutaway and working models of their products.

Factory representatives in attendance for the clinic were Walt Hilton and Duke Munchhof representing Recold, Pete McCarty and John Hogan from Sporlan Valve, Chuck Yates for Tecumseh, and Merle Haynes for Chemical Solvent.

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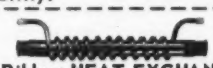

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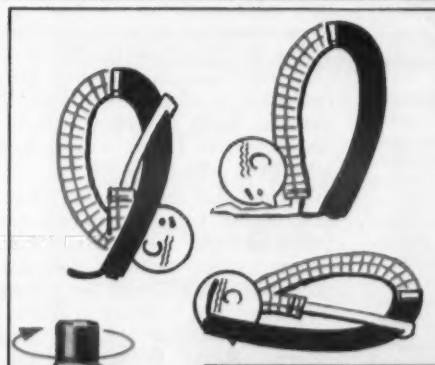

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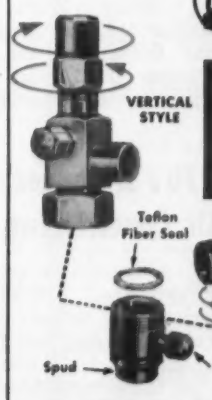

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California Cops Keep Cool In Highway Patrol

INCREASED efficiency of officers like Lt. W. Rasmussen has resulted from installation of Mark IV air conditioners in 73 vehicles of the California State Highway Patrol.

SACRAMENTO, Calif. — In recent months 73 patrol cars of the California State Highway Patrol, headquartered here, have been equipped with automobile air conditioners, announces the John E. Mitchell Co., Inc., Dallas manufacturer of Mark IV units.

In an official statement, the police agency declared that tests show beyond question that cool motoring comfort during the summer months, especially on the California desert runs in temperatures which soar above the 120° mark, pays off in increased alertness and efficiency of its patrol officers, according to the manufacturer.

Frigikar Purchases Building To Effect Consolidation, Expansion

DALLAS — Bert J. Mitchell, president of Frigikar Corp., told shareholders that the company has purchased, for $250,000 cash, a plant on Harry Hines Blvd. which will consolidate departments now occupying four separate locations.

Noting that the plant "will enable us to operate more economically," Mitchell said the company also "will be able to produce more of our various component parts, thereby enabling us to utilize our labor force more fully the year around, plus having the needed facilities for the expansion of our transport refrigeration department.

"Interest is still strong," he said, "for our Frigiking Uni-Twin transport and/or bus units, as well as our Frigikab Kooler Auxiliary unit which was introduced this year after almost three years of research and development.

"Sales of the Frigikab Kooler auxiliary system were higher than expected and we anticipate rapid expansion of sales next year, since this is a unit that can be installed on any make or model of truck."

As previously indicated, Frigikar and subsidiary, Reliance Engineering & Mfg. Corp., set another new high record in both sales and profits for the six months ended June 30. Net sales totaled $5,521,197 and net income $551,808.

Texas Supplies Cooling for Foreign Cars

MARK IV has the distinction of providing air conditioning for what is said to be the only Rolls Royce station wagon in existence. Under-dash system was installed by Wes Fisher, Mark IV distributor in Witchita, Kan.

LINDUSTRIES, Inc. of Fort Worth claims the first air conditioner designed specifically for the Italian Fiat 1100 and 1200 cars. Compressor is driven through magnetic clutch; evaporator (upper left) is under hood. Air outlets and controls are mounted in small case beneath dash.

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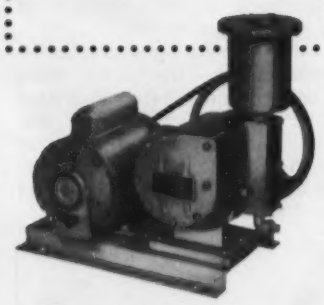

Completely removing water vapors and other condensables before introducing refrigerants stops formation of corrosive acids that will cause operating trouble and damage to equipment. These new Stokes pumps were designed specifically to give you that extra protection. All this is accomplished at room temperatures; no heating, torching or bake-out. And look at their features! Rugged, reliable industrial construction, fast-pumping, lightweight, compact, portable, quiet . . . giving you *more performance per dollar than any comparable pump!* For full information, just print your name below and attach this ad to your letterhead.

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STOKES

Los Angeles Mfrs. Rep Opens San Diego Branch

LOS ANGELES—Air Conditioning Supply Co., 137 S. Anderson St. here, one of this major industrial area's oldest and largest manufacturer representative firms, has expanded its coverage in The Southland by opening a new branch office to service the San Diego sector, it was recently announced by President Lind Davenport.

The facility is located in the heart of the metropolitan sector at 3752 Rosecranz Blvd., San Diego 10.

Davenport indicates the expansion was predicated on A.C.S. being awarded exclusive sales representation for Drayer-Hanson's air conditioning products in Greater San Diego. (Purely local firms had represented the West Coast manufacturer there).

Davenport's firm, since 1950, has represented D-H in an area that includes Greater Los Angeles and north to Bakersfield, Calif.; plus portions of Nevada.

Roy Graser has been appointed sales engineer to man the new facility initially. Graser joins A.C.S. directly from a 5½-year association with D-H as sales application engineer. A second sales engineer, promiment in San Diego, was to join the firm, effective Oct. 1.

Other non-competitive manufacturers to be represented through the new San Diego branch office include: National-U.S. Radiator Corp., New York Blower Co., Dryer Electric Corp., Connor Engineering Corp., Metal Industries, Inc., Flanders Filters, Inc., Little Giant Pump Co., and Loren Cook Co.

2-Alarm Fire Damages Stoker Air Conditioning

DALLAS — A two-alarm fire caused an estimated $20,000 damage recently to a two-story brick apartment building which also has the Stoker Air Conditioning Co. on the ground floor. The upper floor on one side was gutted and there was considerable water and smoke damage to the downstairs apartments and business.

Perfection Names 14 Distributors

CLEVELAND—Fourteen new wholesaler distributors for Perfection furnace, air conditioning, and heat pump products have been appointed by Perfection Industries, Div. of Hupp Corp.

The appointments reflect "a continuation of Perfection's program of expanded distribution through strong, independent wholesalers," according to Carl W. Millsom, vice president in charge of sales and advertising.

The new wholesalers are: Appliance Distributors, Tucson, Ariz.; Appliance Distributors (Branch of Tucson), Phoenix, Ariz.; Climate Engineers, Inc., Jackson, Miss.; Clausen Furnace & Supply Co., North Clinton, Iowa; Dale Supply Co., Nashville, Tenn.; Foster-Thornburg Hardware Corp., Huntington, W. Va.; Goff-Gott Corp., Elmira, N. Y.

Also, Karr Supply Co., Wheeling, W. Va.; North American Distributing Co., Boston; Temperature Supply Co., Billings, Mont.; Thompson & Holmes, Ltd., San Francisco; Payne Mfg. Co., a division of Thompson & Holmes, Ltd., North Sacramento, Calif.; Wedum Supply Co., Alexandria, Minn.; Perfection Wholesale Co., Milwaukee.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

WHAT . . WHEN . . WHERE

—A Guide to Coming Events of Interest

American Gas Association Convention
Oct. 5-7, Conrad Hilton hotel, Chicago.

National Frozen Food Distributors Association Meeting
Oct. 25-28, Sherman hotel, Chicago.

Refrigeration Service Engineers Society Convention
Oct. 30-Nov. 2, Atlantic City, N. J.

Air-Conditioning & Refrigeration Institute Membership Meeting
Nov. 1, Haddon Hall, Atlantic City, N. J.

Air-Conditioning & Refrigeration Wholesalers Meeting
Nov. 1-2, Atlantic City, N. J.

National Commercial Refrigerator Sales Association Convention
Nov. 2-4, Traymore hotel, Atlantic City, N. J.

11th Exposition of the Air-Conditioning & Refrigeration Industry
Nov. 2-5, Convention Hall, Atlantic City, N. J.

National Hotel Exposition
Nov. 2-6, Coliseum, New York City.

National Electrical Manufacturers Association Meeting
Nov. 9-13, Traymore hotel, Atlantic City, N. J.

The Institute of Boiler & Radiator Manufacturers Meeting
Week of Nov. 9, Seaview Country Club, Absecon, N. J.

National Electric Power Conference
Nov. 18-20, Hotel Westward Ho, Phoenix, Ariz.

National Warm Air Heating & Air Conditioning Association Meeting and Convention
Dec. 1-4, Chase Park-Plaza hotel, St. Louis.

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RACCA Convention--

(Concluded from Page 1, Col. 5)

the labor factor in contractor activity (both in quality and reduced costs), in improved cost accounting methods, in job estimating and bidding, and in general promotion of the contractor's services.

With respect to labor, there was a greater feeling of optimism about the relationship of the refrigeration and air conditioning contractor with union labor than at any previous meeting. This despite the fact that Irving Reckhemmer, president, National Association of Plumbing Contractors, told them that one of the greatest threats to their very existence was the exorbitant wage demands of some local unions.

Another threat on the labor front was cited by Henry Ely, RACCA general counsel and western representative, who spoke of the situation in Fresno, Calif., where members of the United Mine Workers union are doing most of the union-labor residential installations, and have been employed on some sizable commercial air conditioning installations.

This situation resulted, said Ely from a failure of the AFL-CIO craft unions to negotiate proper contracts, and of a "bait" clause in the UMW contract which stated that "The workmen shall be free to accept employment in any occupational classification and they shall be paid the scale of wages applicable to the work performed."

Ely said that while on first thought some contractors might welcome the chaos this created in the labor situation, a survey revealed that the ligitimate, established contractor was being hurt, because of direct selling by manufacturers and wholesalers, by-passing of the contractor, and "jackleg" type of construction.

It was pointed out a provision of the Landrum-Griffin labor law just passed, wherein the contractor in the construction industry can sign up with a union having employes in the construction industry, no matter what type of work it does, even though that contractor does not employ one construction worker, may be the loophole which will permit this type of union activity.

On the whole, however, the contractors applauded talks by Joseph Monahan, United Association general organizer in the air conditioning and refrigeration industry, and John J. McCartin, UA assistant general president, which indicated a growing recognition by the union of the needs and problems of the contractor in this field.

"Our principal aim," said Monahan, "is to see that the contractor has a pool of qualified labor from which he can draw, and that this labor will work at a fair wage and under proper conditions."

New Labor Law Sanctions Joint Training Programs

This is being accomplished through joint training programs (which Monahan pointed out are now legal without question under the new labor law). That progress is being made in providing specialized training among UA apprentices is shown by these facts:

Of the 650 UA locals, more than 270 now have refrigeration and air conditioning divisions. Some 4,400 workers in this field have been organized in the past couple of years. The UA goes along with the joint training program that gives the trainee, in his five-year apprenticeship, three years of specialized training, and two in pipefitting. The UA will hold fast to this, said Monahan, because it believes its apprentices should be well-rounded pipefitters, even though they are aiming to specialize in one field.

McCartin said that in jurisdictional disputes, although the one between the general air conditioning contractor who is a unit installer, and the sheet metal contractor, was a problem which came out of the contracting business, the UA had stepped in and effected a general settlement. McCartin said that he believed that in 90% of the installations, the unit-installing contractor could do his own sheet metal work.

In the matter of maintenance contracts in large industrial plants, where the industrial unions seek to keep out contractors, this has been a tough problem, McCartin admitted, but said that the dispute had gone to a "super committee" for what he hoped would be final arbitration.

Continuous upgrading of journeymen workers is all important to profits, declared Dean J. A. C. Grant of University of California at Los Angeles, Public Representative on the southern California Journeyman and Apprentice Training Committee. Failure to train journeymen in new techniques could well destroy an established industry, he declared.

In the program instituted by RACCA of southern California, a payment of 25 cents an hour is paid by the employer for each journeyman taking the training, and in the first program completed recently some 15% of the total number of journeymen qualified by training and examination for certified status. But their training will not end with this, additional courses are planned on such special subjects as blueprint reading, controls, layout of jobs, etc.

RACCA local organizations should expand their scope to take in all kinds of organizations who do work in the field, such as plumbing, piping, and mechanical contractors, such as Houston has done, said William Moody of that city, also a RACCA past president.

And such organizations should try to educate not only their employes, but also their customers. By this, said Moody, he meant educating architects, engineers, and specification writers, and also these and buyers on bid-taking.

The Texas state-wide contractor organization has developed a book which covers the whole subject of bid-taking, and which is made available to all those who accept bids on private or public jobs.

Education of the job estimator is also important, said Moodyk, and in this area the Houston group has made a survey of labor costs, by type and size of job. Total hours estimated on the job, and then total hours actually used, have been tabulated, which gives the averages by which the individual contractor can determine if his labor costs are out of line.

This meeting of RACCA was also marked by what the records indicate to be the first formal talk ever presented at an annual convention by the president of a manufacturers' association.

Rudy Berg, president of Air-Conditioning & Refrigeration Institute, addressed the group and made these points:

ARI President Seeks Contractor Support

1. The ARI can't "abolish" the 5-year warranty through association action, as this would border on price fixing. However, he encouraged the individual members and the association to put their objections to the warranty in forceful terms to the individual manufacturer.

2. He called for assistance from the contractors in working to repeal Federal and local taxes which retard the industry's progress, and to fight against the imposition of new taxes, such as the one which has gone into effect in Texas.

3. Berg asked for support of the ARI unitary equipment certification program, which he said could be an important factor in improving profits. RACCA followed through on this by passing a resolution endorsing the certification program and recommending its use to all contractors in every area.

Tom C. Alexander, Denver, who had been serving as interim president, was elected president for the coming year.

Resolution--

(Concluded from Page 1, Col. 4)

without provision for the cost of replacement; and

Whereas, members of the public who have purchased such refrigeration and air conditioning equipment often believe in good faith, that the five-year warranty is an unconditional guaranty of operation for five years; and

Whereas, experience has shown that the public, without just cause, holds the contractor responsible for its misunderstanding of the terms of the manufacturer's five-year warranty, thereby resulting in the loss of the contractor of goodwill of the public; and

Whereas, experience has further shown that misinterpretations of the five-year warranty bring about controveries between the contractor, the manufacturer, the manufacturer's agent, and the wholesaler, which are not in the interest of the welfare of the industry; and

Whereas, under normal conditions, defective parts of refrigeration or air conditioning equipment will become apparent within one year or less of the use and thereafter breakdown of equipment is usually the result of uncontrolled operating and maintenance and circumstances,

Now there, we the members of the Refrigeration and Air Conditioning Contractors Association, in convention assembled, do hereby resolve:

That every manufacturer of refrigeration and air conditioning equipment be urged to reconsider the terms and conditions of the five-year warranty so that misunderstandings of the public as to any warranty or guaranty which the manufacturer issues come to an end, and that any such warranty be not in excess of one year;

And be it further resolved; that copies of this resolution be sent to the Air-Conditioning & Refrigeration Institute and to every manufacturer of refrigeration or air conditioning equipment and their agents; and to Air Conditioning & Refrigeration Wholesalers Association and to all wholesalers and distributors of refrigeration or air conditioning equipment; and that contractors in every area continue actively to oppose the five-year warranty.

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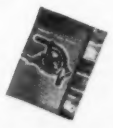

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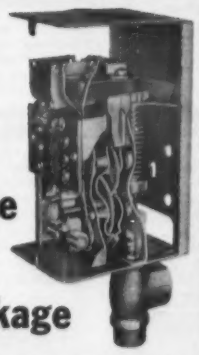

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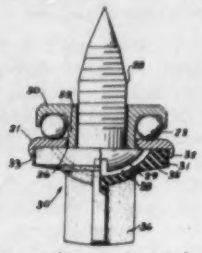
PATENTS

Week of May 26 (Concluded)

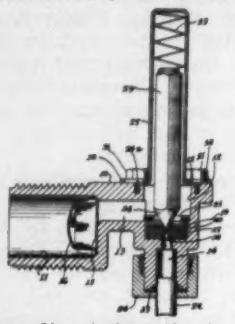
2,886,236. VALVE SEAT. Terence G. Hare, Detroit, Mich.



1. For a valve or faucet having a body with an inlet passage and an outlet passage, a port defined by a circumferential seat positioned between the two passages, a valve member movable in said body axially of said seat, a seal-supporting member, means for rotatably mounting said seal-supporting member on the end of said valve member adjacent said seat comprising a screw passing axially through said seal-supporting member and having a head. . . .

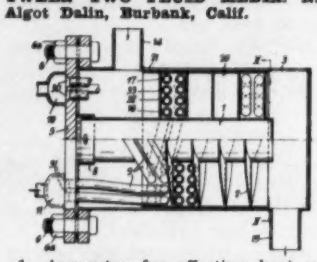
2,886,237. CONSTANT RATE OF FLOW SHUT-OFF VALVE. Robert R. Dahl, Chicago, Ill., assignor to The Dole Valve Co., Chicago, Ill.

A combination shutoff valve and constant rate of flow maintaining device comprising a valve body having a flow passageway therethrough, an annular supporting shoulder in said passageway facing upstream, a resilient annular flow control washer element seated on said shoulder and having a central flow orifice therethrough of lesser diameter than the annular shoulder whereby the area of the



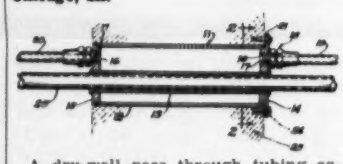
washer adjacent the orifice is unsupported for flexing under pressure upstream thereof to reduce the effective size of the orifice to provide a substantially constant rate of flow control with variations in pressure. . . .

2,886,251. APPARATUS FOR EFFECTING HEAT EXCHANGE BETWEEN TWO FLUID MEDIA. Nils Algot Dalin, Burbank, Calif.



1. Apparatus for effecting heat exchange between two fluid media, comprising a channel shaped after the manner of a screw thread and constituting a first fluid flow path, an inlet header and an outlet header disposed at one and the same end of the channel, and a plurality of tube coils extending along and within the channel and constituting a second fluid flow path extending in substantially parallel flow relationship with the first fluid flow path. . . .

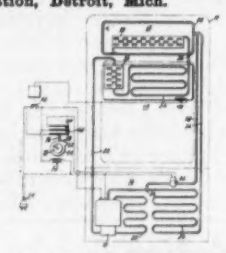
2,886,252. HEAT EXCHANGER FOR MAINTAINING A DRY WALL STRUCTURE FOR REFRIGERATION SYSTEMS. Charles M. Heathman, Chicago, Ill., assignor to Maid-O'-Mist, Inc., Chicago, Ill.



A dry-wall pass through tubing assembly for passing the lines of a refrigerating system through a wall, or the like, comprising an outer cylinder extending through and mounted in said wall, an end plate secured to each end of said cylinder for closing the same, each said plate being provided with a plurality of eccentrically disposed apertures, with similar apertures in the two said end plates aligned with each other longitudinally of said cylinder, means for interconnecting said cylinder into one line of said refrigerating system through one pair of said aligned apertures, and means for accommodating other of said lines for passing the same through said wall, comprising inner tubular means extending through said outer cylinder and the other said aligned apertures in said end plates and secured at the ends thereof to said plates.

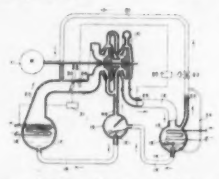
Week of June 2

2,886,908. REFRIGERATING APPARATUS. James W. Jacobs, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich.



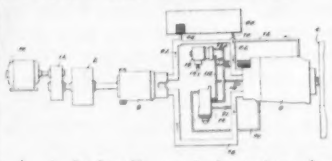
1. Refrigerating apparatus including an above-freezing food storage compartment and a below-freezing compartment, a thermal heat transfer barrier between said compartments, a refrigerant liquefying means, a freezing evaporator means in heat exchange relation with said below-freezing compartment and having its inlet connected to an outlet of said liquefying means. . . .

2,886,909. GAS COMPRESSION APPARATUS. Stanley J. Rachfal, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



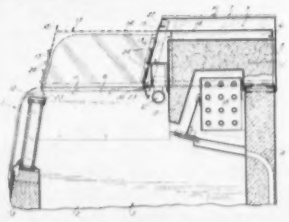
1. A refrigeration machine comprising a centrifugal compressor, a constant speed motor operating a the centrifugal compressor, a condenser, a discharge line connecting the compressor and the condenser, for transmitting compressed gaseous refrigerant to the condenser, an evaporator, a suction line connecting the evaporator and the compressor for supplying gaseous refrigerant formed in the evaporator to the compressor. . . .

2,886,910. HYDRAULIC CONTROL SYSTEM FOR A REFRIGERATION DRIVE. Melvin M. Hann, Rockford, Ill., assignor to Sundstrand Machine Tool Co., a corporation of Illinois.



1. A hydraulic control system for providing a constant input to a hydraulic motor from a variable speed swash plate type hydraulic pump comprising, in combination; an orifice in the outlet of the pump, a slidably mounted control valve having opposite ends thereof connected by fluid conduits to opposite sides of the orifice. . . .

2,886,911. FROZEN FOOD DISPLAY CABINET AND COVER THEREFOR. Delbert A. Hargrave, Minneapolis, Minn., assignor to Schaefer, Inc., Minneapolis, Minn.

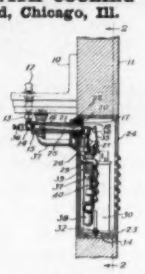


3. In a refrigerated display case comprising spaced upstanding side walls and spaced front and rear walls defining an open top food display case, an evaporator coil-insulating frame of inverted U-shape in cross-section extending upwardly from the rear portion of the case, an open front housing member including a top wall having rear and side walls depending therefrom supported on and extending across the rear portion of the case in spaced relation to the insulating frame and providing therebetween an inverted U-shaped forwardly opening housing. . . .

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

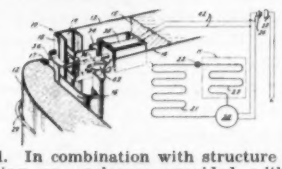
Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D. C.

2,886,812. FREEZE-PROOF FOUNTAIN WITH COOLING UNIT. Walter H. Wood, Chicago, Ill.



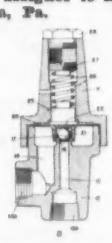
2. In an outdoor freeze-proof fountain and cooled liquid supply unit, an insulated cabinet positioned inside of the wall of a building and opened to the inside of the building which is heated sufficiently to prevent freezing, an outside staple wall hung fountain comprising a bowl and bubbler mounted exteriorly of the building closely adjacent the top of the cabinet and having supply pipe and drainage elements for the bubbler and bowl extending directly therefrom through the outer portion of the building wall directly under the fountain and through the upper portion of the outer wall of the cabinet to the inside of the cabinet, and an electrically operated cooling unit mounted in the cabinet and having directly connected means for cooling the supply to the fountain.

2,886,869. CABINET DOOR SAFETY APPARATUS. Iber C. Courson, Glenside, Pa., assignor to Philco Corporation, Philadelphia, Pa.



1. In combination with structure defining an enclosure provided with a door and having electrical power supply means operation of which is necessary for normal functioning of apparatus housed within said enclosure, means operable upon closing of the door to hold the door in closed position, door stop means movable between a rest position and an operative position in which said stop means prevents closing of the door and consequent operation of the means for holding the door in closed position, means urging said stop means into operative position. . . .

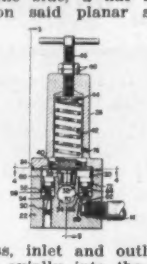
2,886,946. DIAPHRAGM RELIEF VALVE. John T. Barron, Willow Grove, Pa., assignor to Milton Roy Co., Philadelphia, Pa.



1. In a diaphragm relief valve including a casing having inlet and outlet ports, the improvement of means for increasing the valve capacity for a given size port opening comprising a seat in said inlet port, check means disposed on said seat and having a diameter greater than the diameter of said inlet port, flexible diaphragm means disposed within said casing, means for applying a biasing force to said diaphragm means to hold said check means on said seat at pressures below a predetermined pressure, and shroud means depending from said diaphragm means and surrounding said check means. . . .

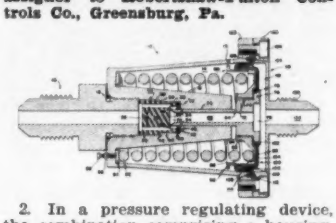
2,886,947. REGULATING VALVE. Clement W. Montgomery and Thomas R. Foley, Franklin, Ohio, assignors to The M & F Mfg. Co., Franklin, Ohio.

In a valve of the nature referred to; a block forming the valve body having one planar side, a cylindrical recess in said one side, a flat flexible diaphragm on said planar side closing



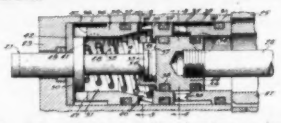
said recess, inlet and outlet passages extending axially into the valve body from the bottom of said recess at circumferentially spaced points, an exhaust passage extending axially into said body in the center of said recess, a sleeve seated on the bottom of said recess and detachably fitted into the end of said exhaust passage to engage the diaphragm to form a seat. . . .

2,886,949. FLOW CONTROL DEVICE. James R. Evans, Long Beach, Calif., assignor to Robertshaw-Fulton Controls Co., Greensburg, Pa.



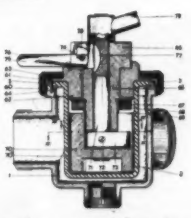
2. In a pressure regulating device, the combination comprising a housing, an inlet passage extending into said housing, an annular shoulder in said housing forming a bottom wall of said inlet passage, an outlet passage in said housing intersecting said bottom wall to establish communication with said inlet passage. . . .

2,886,951. ACTUATOR VALVE. Francis S. Flick, Oak Park, Ill., assignor to Flick Reedy Corp., a corporation of Illinois.



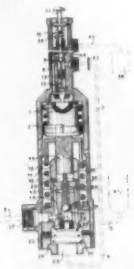
5. An actuator valve having a housing with spaced supply, and exhaust fluid ports and an intermediate fluid port adapted for connection with a unit to be controlled; a two part valve member slidable within the housing. . . .

2,886,952. SELECTOR VALVE. Cornelis Klaren, Murmerwoude, and Johannes Minnema, Westergeest, Netherlands.



4. A valve comprising in combination, a casing, inlet and outlet ports located in the side wall of said casing, a presser element rotatably mounted in said casing, an envelope of flexible resilient material, said envelope surrounding the presser element and being endwise fixedly sealed with respect to the casing, said envelope being adapted to be brought into engagement with the wall of the casing by actuation of the presser element. . . .

2,886,953. VALVE SYSTEM TIMING DEVICE. Jean Louis Gratsmuller, Paris, France.



1. A flow-controlling means interposed in a liquid utilization circuit between a source of liquid under pressure and a pressure-liquid receiving line, comprising means defining a chamber of a predetermined volume, a first conduit means between a source and the chamber and a second conduit means between the source and the line. . . .

(To Be Continued)

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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Servicing Automobile Air Conditioners

(Vol. 4 — 1959 Models)

BY C. DALE MERICLE

Like the preceding three volumes in this series (which are available in handy manual form), these articles are intended for the *experienced* refrigeration mechanic, not the novice, and are primarily designed to assist in emergency service.

Detailed step-by-step instructions on adjustment and replacement procedures are purposely omitted, partly to discourage the "do-it-yourself" clan and partly because major repair jobs for the most part will be performed by authorized service agencies of the manufacturers without whose cooperation this series could not have been written.

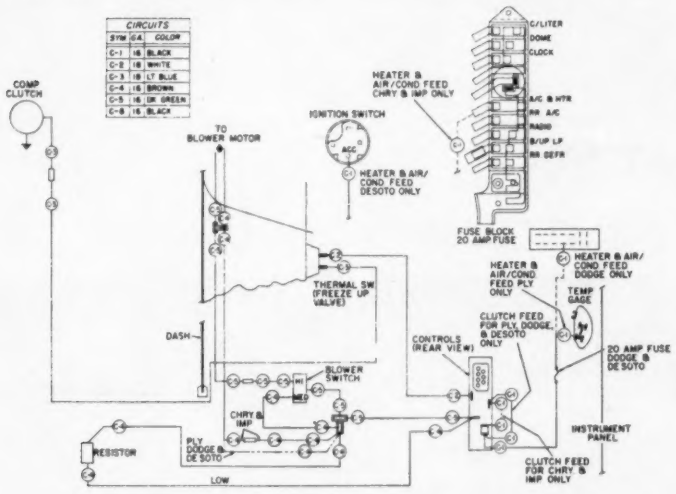


FIG. 5—Early production wiring of 1959 Chrysler front-end unit.

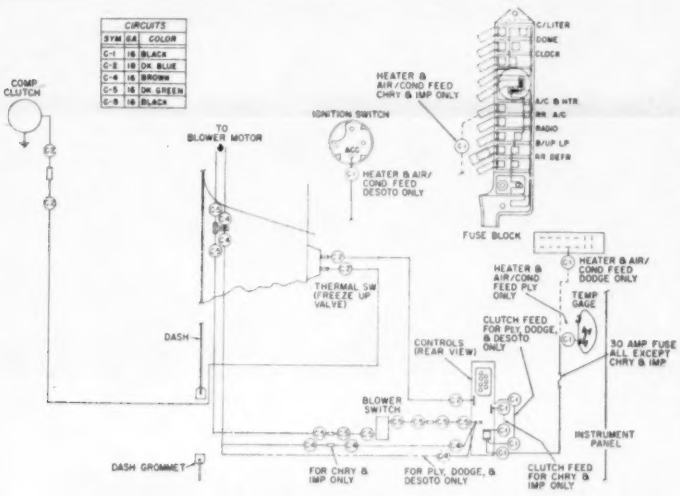
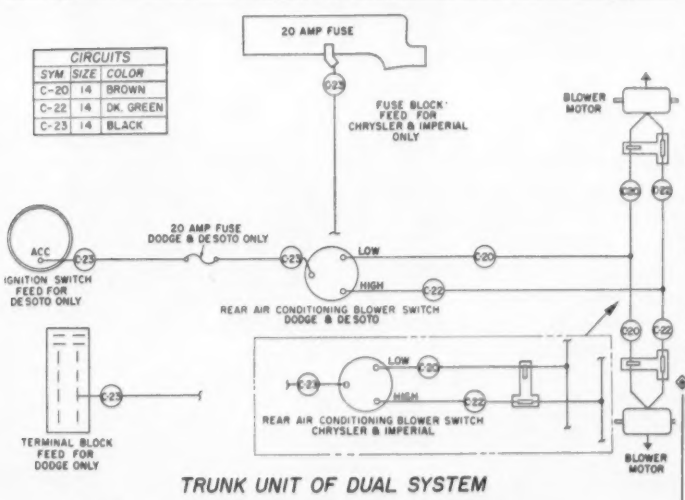


FIG. 6—Later production wiring of 1959 Chrysler front-end unit.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C-22 14 DK. GREEN
C-23 14 BLACK
20 AMP FUSE
FUSE BLOCK FEED FOR CHRYSLER & IMPERIAL ONLY
BLOWER MOTOR
20 AMP FUSE DODGE & DESOTO ONLY
ACC
IGNITION SWITCH FEED FOR DESOTO ONLY
LOW
HIGH
REAR AIR CONDITIONING BLOWER SWITCH DODGE & DESOTO
REAR AIR CONDITIONING BLOWER SWITCH CHRYSLER & IMPERIAL
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TRUNK UNIT OF DUAL SYSTEM

FIG. 7—Wiring of trunk unit of 1959 Chrysler dual system

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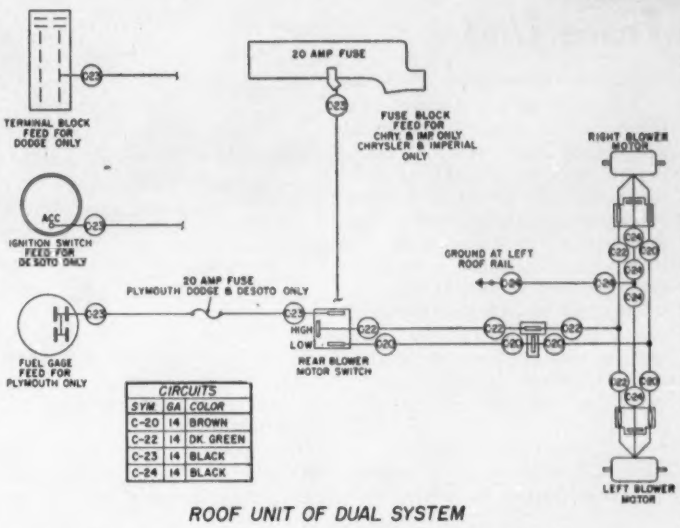
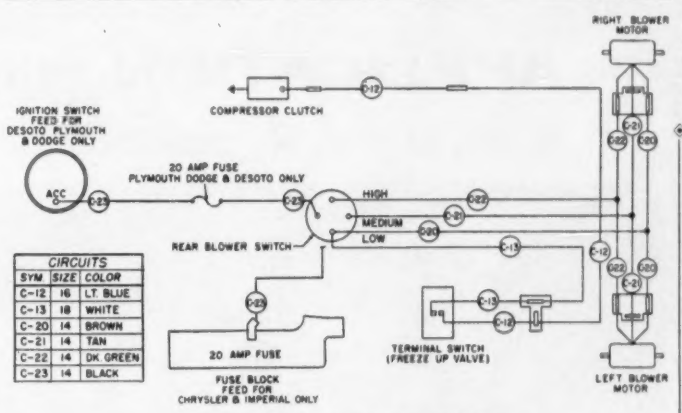

TERMINAL BLOCK FEED FOR DODGE ONLY
20 AMP FUSE
FUSE BLOCK FEED FOR CHRY & IMP ONLY CHRYSLER & IMPERIAL ONLY
RIGHT BLOWER MOTOR
ACC
IGNITION SWITCH FEED FOR DESOTO ONLY
GROUND AT LEFT ROOF RAIL
20 AMP FUSE PLYMOUTH DODGE & DESOTO ONLY
HIGH
LOW
FUEL GAGE FEED FOR PLYMOUTH ONLY
REAR BLOWER MOTOR SWITCH
LEFT BLOWER MOTOR
CIRCUITS
SYM GA COLOR
C-20 14 BROWN
C-22 14 DK GREEN
C-23 14 BLACK
C-24 14 BLACK

ROOF UNIT OF DUAL SYSTEM

FIG. 8—Wiring of roof unit of 1959 Chrysler dual system.



TRUNK UNIT OF SINGLE SYSTEM

FIG. 9—Wiring of trunk unit when used as only evaporator assembly in 1959 Chrysler system.

CHRYSLER (3)

Chrysler Corp.
Detroit 31, Mich.

Wiring

Some variation in wiring is found with the various combinations of systems offered by Chrysler in 1959.

Fig. 5 shows wiring of early production front end unit. Fig. 6 shows wiring of later production front end unit. Wiring of trunk unit of dual system is shown in Fig. 7; wiring of roof unit of dual system is shown in Fig. 8; wiring of single trunk unit is shown in Fig. 9.

SERVICE HINTS

Evacuating System

Following initial installation or opening the system for repairs, it must be evacuated prior to charging. Chrysler recommends the use of a separate vacuum pump and pulling the system down to 28 in. of vacuum.

Charging System

Refrigerant-12 is employed in 1959 Chrysler systems, which are charged with refrigerant in the vapor state through the low side in the usual manner.

Capacities of the 1959 systems are as follows:

Front unit only—2¾ to 3 lbs.

Trunk unit only—3¼ to 3½ lbs.

Dual front and trunk or roof units—3¾ to 4 lbs.

(To Be Continued)

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Air-Con Filter Moves To New Quarters

MEMPHIS — Air-Con Filter Corp. recently moved from 626 National to new quarters at 1137 S. Third, at McLemore.

W. W. Rowland, who heads the concern, said the move was necessary because of rapid growth through demand for the patented Air-Con filters first introduced in 1956 and now marketed nationwide. In its new location, the company will specialize in complete filter fabrication supplies.

It is introducing an Air-Con "Perma-Trim" filter that reportedly will enable a service engineer to fabricate the filter on the job.

The filter's construction permits use with or without framing, according to the company. The corrugated aluminum media is stitched with stainless steel and criss-crossed.

National-U. S. Radiator Buys Magnetic Powders

JOHNSTOWN, Pa.—National-U. S. Radiator Corp. has purchased Magnetic Powders, Inc., which operates a plant at Johnsonburg, Pa. The new acquisition was obtained from Radio Cores, Inc., Oak Lawn, Ill.

T. B. Focke, president of National-U. S. Radiator, said Magnetic Powders was purchased to broaden the line of iron powders currently being produced and sold by the company's Plastics Metals Div. It will be operated as a wholly-owned subsidiary.

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DESIGN ENGINEER

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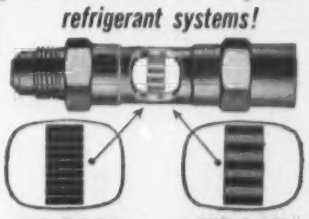

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The MOISTURE-REACTOR is composed of alternate, permanent and changing (Reactor) color bars. When all the bars appear the same color (green)—it's good—there's no moisture in system.

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Be sure to stop at Allin Booth #226, ARI Exposition, Atlantic City, Nov. 2-5.

IRS Studies--

(Concluded from Page 1, Col. 2)

The IRS was urged to set an effective date that will cause the least difficulty for the industry.

John H. Pratt, counsel for the ARI, said the effective date should not be later than the first part of next year. He told IRS that if this is not possible, the date should be postponed until July, 1960. An effective date in the spring, he explained, would mean hardship for producers.

Both ARI and NEMA spokesmen called for changes in the proposed regulation to eliminate ambiguity. ARI made two limited recommendations "to clarify what appears to be the intent of the regulation itself." Both pertain to the proposed definition of "self-contained air conditioning units" as proposed in §48.4111-2(c).

ARI urged that sub-paragraph (1) be amended to read (recommended changes are in italics): "Is designed for the *free* delivery *without ducts* of conditioned air and for the removal of heat." The word "free" would be used instead of "direct" as now proposed.

Pratt said the term "direct" as applied to the delivery of air "is ambiguos and uncertain. Presumably, it is to be interpreted to mean the delivery of air direct from the unit without the use of ducts or other conduits. The change recommended removes this ambiguity by employing language which . . . requires no interpretation. . . ."

ARI also recommended that sub-paragraph (3) be amended to read: "Is designed for use as a portable unit, console unit, or for installation in or in front of a window or other *outside* opening *through which the removed heat is discharged without ducts or other special connections.*"

"The purpose of this recommendation," Pratt explained, "is to amplify and make more meaningful this part of the definition and at the same time tie it into other parts of the entire paragraph.

"Sub-paragraph (1) refers to the 'removal of heat,' but nowhere does it appear how this is accomplished. Furthermore, it is specifically stated that 'the term "self-contained air conditioning units" does not include any unit which required the use of a water-cooled system for the discharge of removed heat.'

"Obviously, one of the purposes for installing a unit in front of a window or other opening is to permit the removed heat to be discharged into the air without it being necessary to use ducts or other special connections. . . ."

Chris Whitting of Westinghouse Electric Corp., chairman of NEMA's excise tax committee, presented its views.

NEMA asked IRS to be explicit in the regulation and to agree to publish rulings defining specific taxable products. One of the changes recommended by NEMA would make clear that taxable products designed for other than household use but which may in some cases be used in homes are not taxable.

Protection was also asked for fixed price contracts entered into by manufacturers with builders and others while IRS debated rule changes.

Trane Unit--

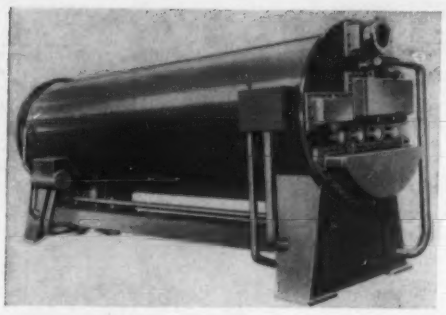
(Concluded from Page 1, Col. 4)

The unit uses a control system which operates the machine at conditions which avoid crystallization. Should crystallization occur, however, because of short periods of power failure, the unit is designed to free itself once normal conditions are restored, it is claimed.

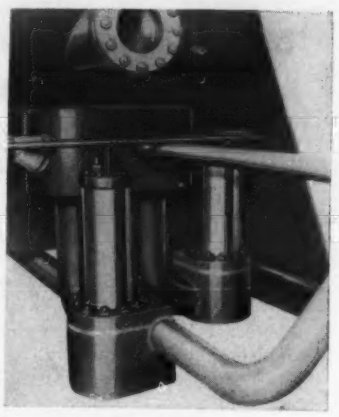
The unit is lightweight, quiet and nearly vibration-free, permitting installation in almost any location where actual weight of the unit can be supported.

Single-shell construction reduces its over-all size, permitting installation in areas with low ceilings. A vacuum bottle principle of the external shell design makes insulation unnecessary for most installations, according to Trane.

The new unit can be placed with one end against the wall since it is designed and fabricated for maintenance and accessibility from either end. Installation time and cost is reduced to a minimum because the machine is completely piped and wired completely with controls which include pump motor starters.



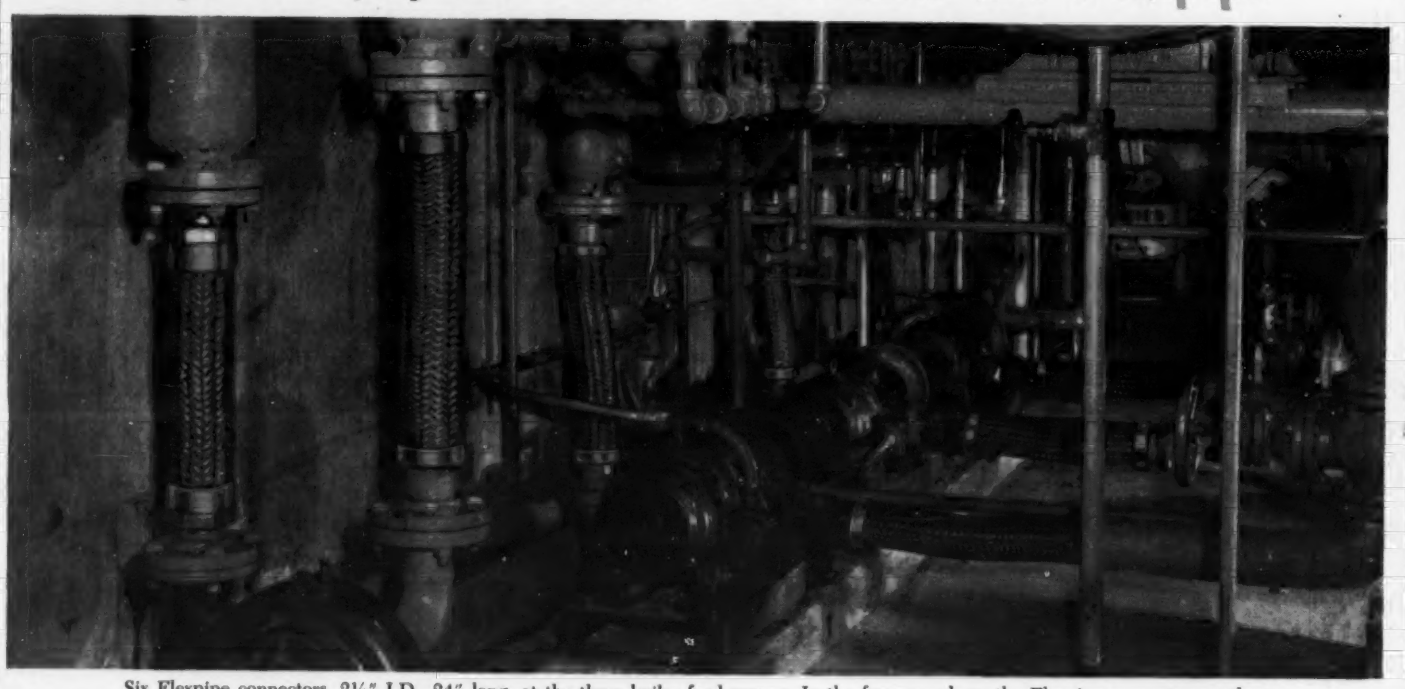
NEW TRANE packaged, fully automatic absorption Cold Generator is hermetically designed to resist air leakage for more efficient operation. The single-shell design reduces machine height, permitting installation in low-ceiling areas.



SELF-LUBRICATED and cooled, centrifugal hermetic pumps are the heart of the Trane absorption system. They are said to resist air leakage.

APPLICATION HINTS:

Ways to simplify construction and cut costs with Flexpipe



Six Flexpipe connectors, 2½" I.D., 24" long, at the three boiler feed pumps. In the foreground are the Flexpipe connectors at the hot water pump feeding Weathermaster units throughout the Administration Building of the Illinois State Toll Highway Commission.

Flexpipes made this heating and cooling system more compact, cut installation time

Artist's rendering of the Administration Building, Illinois Toll Highway Commission. Lankton, Ziegele, Terry & Associates: Architects and Construction Engineers.

Heating and cooling systems can utilize all the advantages offered by Flexpipe connectors. Flexpipes take up movement caused by expansion and contraction in piping from wide variations in temperature. At the same time, they absorb vibration and dampen noise from pumps.

They make possible better utilization of space because they are easier to install in tight quarters and can handle offset. Note in photo above how vertical Flexpipes from boiler feed pumps saved space by making possible easy connections to piping flush against wall. Conventional piping would require considerably more work room—plus the time and cost of installing elbows, couplings, short runs of pipe, etc.

Flexpipe's flexible core can be either bronze, galvanized steel or stainless steel—I.D.'s range from ¼" through 16".

WHERE TO BUY: Leading wholesaler distributors can provide you with information about Flexpipe in standard sizes. For the name and address of the distributor serving your area, or for more detailed information, write to: Anaconda Metal Hose Division, The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

Two 8" I.D. Flexpipe connectors handle cooling water for refrigeration unit.

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